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VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

EDITED BY

GEORGE FLEMING, F.R.C.V.S.,

Veterinary Surgeon, 2nd Life Guards.

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AND

Annals of Comparative Pathology.

JANUARY, 1879.

WE feel certain that the members of the Veterinary profession throughout the British Empire, share as deeply and sincerely in the great sorrow which has befallen the Royal family, as any of her Majesty's most loyal and dutiful subjects. The death of the Princess Alice—the name by which she was lovingly known to us—has struck a true and tender chord of sympathy in every heart, and there must be few indeed who do not mourn her untimely decease as if they grieved for the loss of a dear one of their own domestic circle. The heavy, indeed irreparable, bereavement sustained by our gracious Queen, the Grand Duke of Hesse Darmstadt, and the members of the Royal family, has elicited the most fervent condolences, not only in every part of her Majesty's dominions, but throughout the world. In these expressions of sympathy we desire to join.

The Princess had for years endeared herself to every one who came in contact with her, or knew her only by the tongue of report, by the possession of all those qualities which constitute the highest type of womankind ; and she has left behind her a name for gentleness, goodness, and devotion, which few princesses could have equalled, and none have excelled.

"To live in hearts we leave behind
Is not to die."

NOTE-BOOK CASES.

BY "NABOCKLISH," M.R.C.V.S

AS a junior practitioner deriving great benefit from cases recorded from time to time in your valuable journal, I beg to lay before your readers the following peculiar cases :—

NO. 1.—PUERPERAL APOPLEXY.

The subject was an aged cow, and twenty-four hours after calving I was sent for in haste, as the farmer said she was reeling about and showed great difficulty in getting up after she had been lying. On arriving about two hours after, I found it a well-marked case of Parturient Apoplexy. I treated it in the usual way, and after being down two days she arose and appeared to be going on all right, yielding a little more milk every meal, and feeding nicely. I cautioned the farmer about giving her too much food at one time, and left her doing well.

Just twelve days subsequently the farmer came again, and said the cow was unable to travel out of the pasture into the cow-house, and wished me to go at once to see her. He had put her on full allowance of diet, and had been giving her bean meal for the last two days, as she was a deep milker.

I found on my arrival that the men had got her into the cow-house, but she was down and had all the symptoms she exhibited before, though they were more severe, and there was also the addition of Tympanitis.

After treating her for three days, she again arose and did well. The only drawback she had was a slight paralysis of the left hind-leg, with knuckling over at the fetlock joint for a week or two, but this afterwards got all right.

Perhaps some of our older practitioners may assist me to explain the following point:—What is the reason the left leg is invariably affected with paralysis? I have seen a great many cases, and always find the left leg affected when only one leg is implicated.

NO. 2.—CHOKING IN A MILCH COW.

There is nothing remarkable in the following case, but I thought it might be of service to some of my younger colleagues as an illustration of what may be done by exercising patience.

The subject, a milch cow, was being driven into the pasture on a Friday afternoon after milking, when she ran into a cart-shed and snatched up a potato which got into her gullet.

The farmer, after trying to force it down with his fingers externally, thought he would try the probang—an old one of his father's, made of twisted cane with a wooden end. The potato was about two-thirds down the œsophagus when he introduced the probang, and on touching it I suppose it moved about a foot, when he thought it would go down, as his idea was that if ever it moved it would pass on of itself. Imagine his surprise when, on withdrawing the probang, he found he had left the end of the instrument in the cow's gullet. The animal began to be rapidly tympanitic, so he tried the other end of the probang, though to no purpose—he could not move the obstruction.

Matters went on until Sunday morning, when I was sent for, and as the messenger told me the cow had been choked since Friday, I did not trouble to take a probang or anything else, thinking it a hopeless case. On arrival I found the owner had gone to church and left the cow in charge of an Irishman, who told me the history of the case, remarking that "the end of the choke-rope was down below." I thought matters were hopeless, and came to the conclusion to have nothing to do with the case; as in the country if anything goes wrong in such operations as the castration of colts, or passing the probang, there is more noise made than if twenty sick patients died. At night the farmer sent for me again, and told me I might do as I liked with the cow, as he saw she was going to die.

I thought he had ruptured the œsophagus, but nevertheless resolved to introduce my own probang, when I found the obstruction just within the chest and very firmly fixed, as I was not able to move it in the least. The cow was still tympanitic, so I introduced the trocar and left instructions to give her half a gill of linseed oil every hour during the night, and until I came again in the morning.

In the morning I found the cow looking very ill. I introduced the probang again, and on applying slight force the obstruction now passed down into the stomach. I told them

to give the cow nothing but very thin bran-and-water gruel, and foment the neck and chest, or rather the breast down to the dewlap.

On Tuesday she looked very sickly, with pulse very feeble; so I gave her a stimulant, and told them to give her gruel frequently with one pint of beer therein each time.

On Wednesday there was no improvement; so the treatment was continued, with the addition of applying some stimulating liniment to the neck, and administering a dose of laxative medicine. No solid food had been allowed as yet.

On Thursday she began to improve, and was turned out into a grass field for half an hour. From that day she did well, and now looks none the worse for her long suffering.

THE USE OF THE TROCAR AND CANNULA IN TYMPANY IN THE HORSE.

BY CAPTAIN RUSSEL, F.R.C.V.S., GRANTHAM.

IN continuation of my report on the above subject, which was kindly inserted in the last month's number of the VETERINARY JOURNAL, I have to add, that on the 20th November my attention was directed to the post horse at the George Hotel, upon which I had operated for Tympany on the 26th October, "as he had lately appeared stiff in his movements, and out of sorts." On my seeing him, and removing his clothing, I perceived a large swelling upon his flank, about where the first puncture of the trocar had been made. On examining this swelling, I fancied I could feel deep-seated fluctuation; and feeling sure I had an abscess to deal with, I ordered it to be well fomented for a day or two, to endeavour to get it to point externally. On the 23rd, however, finding it made no progress externally, I examined it with an exploring needle, when at a depth of two inches I came upon pus. Having made a good opening, upwards of a quart of laudable pus escaped. The case has gone on well, and the animal was discharged to-day

(December 6th), convalescent. The men in charge had evidently not removed his clothing for some days, or they must have noticed the swelling. I consider I am bound to report this circumstance, for in the description last month I stated I had never seen any ill-effects at the site of puncture.

SCROFULA IN A SHORT-HORN BULL.

BY G. GRAY, M.R.C.V.S., BAKEWELL, DERBYSHIRE.

ON August 9th I received a message requesting my attendance upon the bull "Dairy Lad," at Chatsworth Paddocks, the property of His Grace the Duke of Devonshire. As the bull was supposed to be suffering from "Mawbound," a pound of mag. sulph. had been administered previously to my seeing him. All the symptoms of the so-called Mawbound being present, viz.: inappetence, rumination suspended, pulse and breathing very little increased; grunting occasionally, especially when made to move, or after taking food or water; very great distention on the left side, hard and tense to the touch—so much so, that I took particular notice of it at the time I examined it; in fact, the stomach felt more like a tumour, especially under the false ribs. There was slight pain on pressure; the bowels were constipated; moisture on the nose, and the eyes bright. I prescribed aperient and fever medicines, and visited him daily up to the 17th; his bowels had never acted freely until then, neither was the stomach much reduced, even after the purging had taken place. The only food he had throughout was oatmeal and linseed, made into gruel. Up to the 20th the bowels were kept open by mild aperients and stimulants, administered daily, with the view of arousing the stomach into action. At this date I felt something like a foreign body in the stomach, immediately under the false ribs; my convictions were strengthened from the fact that considerable pain was evinced at that point, when manipulated, more so than any other part of the stomach. I continued the above treatment up to the 23rd, when the stomach had become

very much reduced. At the lower margin of the stomach, and close to the false ribs, I felt two small prominences, like buttons; a little above this point, and close to the last rib, I still felt the hard substance already mentioned; otherwise the stomach felt quite empty. I was now satisfied that I had something more to deal with than a case of Mawbound, but was unable to give a decided opinion as to what the animal was really suffering from. Although purgatives had been prescribed with great caution, diarrhœa now set in to a very marked degree; indeed, I feared it would prove fatal in a very short time. I was careful, however, in checking it, and it soon yielded to treatment. From this date he gradually improved. His appetite partially returned, although it was very capricious. He preferred grass to everything else, and would only eat it when turned into the paddock. The peculiarities about the stomach remained much the same, with the exception that the small button-like bodies increased in number. I saw him on September the 1st and 4th. His appetite gradually improved, and rumination returned. I prescribed mineral tonics, and under them he improved rapidly. I made my last visit on the 12th, when I considered him convalescent. He went out to the paddock daily, and was quite playful. I ordered the tonic treatment to be continued for another week.

On October 6th I was requested to call and see the bull, as a tumour had come upon his belly. On the previous day the attendant observed the swelling for the first time. It was situated just behind the umbilicus, over the course of the penis, and inclining rather to the right side; it was circumscribed, about the size of a man's head, evidently imbedded in the abdominal muscles, and was of a hard, firm texture. The animal evinced no pain, even when the tumour was firmly pinched. I prescribed an embrocation, to be applied with smart friction daily. I informed the attendant to let me know should any change take place, also stating that the tumour was due to a scrofulous diathesis, which, in all probability, had a deal to do with his previous illness. I examined the region of the stomach; the hard substances under the last rib, already referred to, had decreased in size and hardness, and one of the small button-like bodies had

increased to the size of a duck's egg. I had no hesitation now in pronouncing the animal "Graped"—the popular name for Scrofula in this part of the country. I heard occasionally from the attendant that no change had taken place in the tumour.

On November 1st my immediate attendance was requested, as the bull had been taken seriously ill when out exercising. He was seized with a fit of coughing, and a quantity of matter was ejected through the nostrils. He was taken to his box in a fit of rigors, which was passing off when I saw him, two hours after the first attack. The extremities, ears and horns, increased in temperature, pulse 80 and hard, breathing rapid, attended with a grunt, expression anxious, great disinclination to move, cough present, but short and painful. Auscultation discovered pleurisy on both sides, with dulness throughout the area of the right lung. The sounds in the left lung were increased. My opinion was asked if the bull would be fit for stud purposes if he recovered? I answered that he was unfit for breeding purposes, whereupon it was agreed to have him destroyed. I visited him on the 2nd and 4th. The urgent symptoms had greatly abated, but the right lung was in much the same condition. He looked cheerful and bright about the eyes; his appetite was very capricious and easily satisfied. The tumour on his belly had not increased in size, but was very much softer. The nodules of the stomach were much the same; the large one had rather decreased in size and was softer. I did not see him again until the morning he was destroyed, November 29th. He looked hearty and cheerful, walked to the kennels, about a mile from his box, in good spirits. I could see but little difference in him since my last visit, with the exception that he had perceptibly wasted in muscle. He was shot in the forehead, and bled in the usual way. I may here remark that the blood was unusually dark in colour and flowed slowly.

Autopsy immediately after death:—On removing the skin, the body looked very pale and bright. I had considerable difficulty in removing the abdominal muscles, as extensive adhesions had taken place between them and the viscera. After removing the abdominal muscles, sternum and ribs, the whole of the internal organs were exposed to view. On the omentum

and walls of the stomach were to be seen a quantity of nodules, varying in size from that of a marble to a duck's egg. They were the button-like bodies I could feel during life. I now found the tumour under the last rib (which I could also feel during life), to be a large growth formed on the walls of the stomach and enveloping the spleen; it contained a quantity of creamy-looking pus, as also did the larger deposits. The spleen appeared atrophied, as it was much smaller than natural. The stomach had become adherent to nearly all the organs in contact with it. It adhered firmly to the diaphragm and quite enveloped the liver, where a growth had formed which also contained pus. There were a quantity of nodules deposited within the substance of the liver: some were in a suppurating state, some of a cheesy consistency, and others hard and cartilaginous. Many of the mesenteric and lymphatic glands were enlarged. Both lungs were adherent to the sides, about the median line. The right had been collapsed for a considerable time previous to death, for it firmly adhered to the ribs close to the spine, the whole extent of the mediastinum, and largely to the diaphragm; it was held fast so that it could not contract or expand. The lung contained a large quantity of tuberculous masses in different stages; they consisted mostly of yellow tubercles of a cheesy consistency, in some instances they were fibrous. Under the pleura could be felt roughened prominences, which a closer examination proved to be calcareous deposits. The left lung was little affected. The heart was healthy, with the exception of a round spot about the size of a shilling, situated at the base of the ventricles,—the pericardium at this spot was highly congested, of a bright scarlet red; all around and beneath it was deposited a layer of lymph of a dusky colour. Nothing abnormal was to be seen beyond this in that locality. The tumour already referred to on the belly was situated external to the fascia transversalis. All around the outside of the tumour was deposited a large quantity of gelatinous-looking material of a dirty straw-colour. The abdominal muscles were very much attenuated where they passed over the tumour. The latter contained a large quantity of pus, and the walls of the abscess were fibrous. I did not find any deposits in the flesh,

but I did not look particularly for them, or I would have most likely found some.

[Mr. Gray forwarded portions of viscera from this animal. These consisted of mesenteric, lymphatic, and other glands containing scrofulous deposits and deeply blood-stained. The case was a well-marked one of Tuberculosis, a disease to which we intend to devote attention for some time.]

CASES OF AZOTURIA. WITH COMMENTS.

BY JOHN GERRARD, M.R.C.V.S., MARKET DEEPING.

HAVING had a few cases of this disease, the nature of which has only been lately recognised and described, I thought the relation of them might not be uninteresting to the readers of the VETERINARY JOURNAL. We are undoubtedly indebted to Professor Williams for the exposition of the pathology of this peculiar condition of the horse, in which the albuminoid elements are in such superabundance as to give rise to such puzzling and paralysing effects. But we should have been doubly indebted to him if he could tell us how or why this hyper-nitrogenous condition of the blood and system generally produces such effects, and how it comes to be manifested in so comparatively few of the equine race, that are now so frequently subjected to the overfeeding and want of exercise that are the principal factors in its production—in short, how these unused albuminous elements provoke spasms of the muscles; and whether they act primarily and principally upon the nerve-tissues, or by reflex action induced through the muscular elements of the body? Also, whether it be of the nature of diseased innervation primarily, or diseased nutrition? Further, why it is that in ruminants which are frequently placed in circumstances favourable to a hyper-nitrogenous condition of the blood, we have no analogous physiological condition, unless we admit the large class of diseases occurring in them known as anthracoid, and which, I believe, owe their origin, primarily, to this cause?—

problems more easily stated than solved, but which demand a solution from everyone who desires to render the science more exact, and something more than the mere record of the succession of events, without even an attempt at explanation.

It seems to me that this theory does not account for all the phenomena observed in these cases. Moreover, it is based upon the assumption that the conversion of albumin into urea in the system takes place in the great nitrogenous structures of the body—the muscles and nerves—or in the circulation; and that after physical exertion the urea is increased. Parkes has long since proved to demonstration, that the exit of nitrogen from the system is regulated by its entrance, and that muscular exertion causes no appreciable difference in the elimination; and, further, that it is in the gland-cells of the body—the liver, spleen, pancreas, and salivary glands, etc.—that the change from albumin to urea takes place. In Pyrexia the amount of urea is increased, but this is explained by the rapid metamorphosis of the nitrogenous tissues attending the febrile state, and is no indication of what causes this condition: so that if we admit that urea is increased in Azoturia, it by no means follows that it is both the cause and the effect of the disease.

Moreover, if the exit of nitrogen from the healthy system be regulated by its entrance, it is difficult to see how the accumulation occurs when muscular exertion has been proved to have no influence in its production; and that it has no influence is proved by the experiments of Senator on Tetanus and Chorea. In both these diseases the muscular exertions and contractions are frequently great, and the amount of urea excreted in them during the contractions falls even below the healthy standard. There is in Tetanus, however, as in this disease, an extreme heat developed in the system during the paroxysms, and which points to it as of the nature of *neuroses;* having a different origin than the high temperature developed in specific or symptomatic fevers. But more of this anon. Although the symptoms of Azoturia simulate those of uræmic poisoning in the human subject, we have not in the former the producing cause of the latter, viz., the arrested secretion of urine, either from Nephritis or degeneration—fatty or amyloid—of the prin-

cipal urea-excreting organs, the kidneys. In all the cases of Azoturia I have recognised, I have always found the urine abundant, and sometimes it passes away voluntarily, unless when the patient is so prostrate as to be unable to stand—even when lifted—and which is frequently the case in similar conditions arising from other causes.

Case I.

An aged half-bred brougham-horse, in good condition, the property of an innkeeper. The horse had been idle for some weeks, and was taken out for exercise by the groom, who rode him into the river before returning. Immediately he was placed in the stable he began to show symptoms of Colic, getting up and lying down, and perspiring profusely. Some gin and water had been administered to him, and during its exhibition he had tumbled down, and in doing so fell across a wooden pole suspended from the roof by a rope, and which formed the partitions of the stable. He had great difficulty in getting up again, and reeled and staggered as if his back was injured by the fall. At this stage I was called to see him. Then he was down, straining fearfully, and perspiring profusely, and every now and then attempting to rise, but only to tumble down again. At the first glance, and with the relation of the history of the fall, I did not recognise the condition, but the owner thought if they could only "*see him stale*" it would soon be all right, unless the back be broken—"for he was sure it was Colic at first." The popular opinion in this district regarding Colic is that "it is a stoppage of urine," and when occurring in the female, the attendants resort to some practices which, I am afraid, if known to any of the officers of the Society for the Prevention of Cruelty to Animals, would bring them within wind of the law. The horse did not *stale*, however, but continued in great pain throughout the night, despite all efforts to relieve him. In about twelve hours from the commencement of the attack, the symptoms subsided; but he remained in this prone, prostrate condition for ten days, and when lifted up could not use his legs, or make any attempts at standing. I drew off his urine twice a day; it was of the colour and consistence of linseed oil. I also put a charge

across his loins and back, treated him with nervines and tonics, but to no effect, for he died on the tenth day.

A minute examination of the spinal column and cord, and also the large nerves in the gluteal region, revealed nothing abnormal to the naked eye.

Case II.

An aged pony in high condition, the property of an old lady who had been ill for some weeks, which had led to the animal not being used. The lady dying, the pony had some extra work in taking round messages, and the first night after the death of her mistress she was taken ill in coming from the station, a distance of three miles. I was hurriedly summoned, as they thought she was going to die. She was got home with difficulty, and I found her in great pain, breathing very hurriedly, scarcely able to stand, and the perspiration streaming off the body and legs as if she had come out of the river. When standing she had a strange tendency to draw all her feet together, and bending her head towards the ground and between the fore-legs. She trembled so violently that it was impossible to ascertain the character of the pulse, or to administer anything for some time. A strong anodyne temporarily allayed the urgent symptoms, when she voided a quantity of blood-coloured urine and seemed easier. An aloetic purge was administered, but she continued in pain, with more or less remissions, for two days, when the symptoms of spasm, when standing, gradually subsided, and she regained pretty much her wonted appearance, being only slightly dull for some days.

Case III.

A heavy six-year-old cart-horse, about a month recovered from a slight attack of influenza. One afternoon, when turned into the yard to water, he was observed to stagger, and nearly fell before he could get in again. A few hours later he broke out in a perspiration, fell down, and was with difficulty got up again, or kept standing when he was up. He had been lying for four hours when I reached him, and he then seemed easy; but, on being urged to rise, he was seized with violent spasms,

and was no sooner up than he went down again, plunging and kicking so much as to render it very hazardous to approach him. When up he discharged a quantity of blood-tinged urine, which revealed the pathological condition. He would drink and eat when food or water was presented to him, and the peculiarity of the attack was a tendency to stretch and strain, and endeavour to lie on his back or throw himself down when attempts were made to raise him. The pulse was full and strong, temperature 103°. I hesitated whether I should bleed him, as he was a strong and vigorous animal, but, scientific teaching predominating, I gave my patient the benefit of the doubt, and he received a brisk aloetic purge instead. Two days afterwards I had him slung, with great difficulty, but the hind legs were quite powerless as a means of support, although he could struggle and kick with them. He seemed, in fact, as if his back was broken, or some serious interference with the motor tract of the cord had occurred, for sensation was unimpaired.

He hung in the slings for three days, and ate fairly of everything presented to him; the urine was voided frequently, and improved in colour and consistence, but his legs began to swell, and his sides and flanks to become raw from the pressure of the slings, and altogether it seemed a hopeless case. On the morning of the fourth day after being slung the rope gave way, and he was found by the attendant struggling and straining and quite exhausted. He died before we could raise him again. Forty-eight hours elapsed before I could examine the body, and it was in such a state of decomposition by that time that it was impossible almost to determine the condition of any of the important organs—in fact, it was almost putrid, and would not bear handling.

Case IV.

An aged cart-mare of a light breed had been made up for sale about three weeks by being fed on maize and hay. She was purchased at the sale by a client of mine, who employed a stranger to take her to his home. The hanger-on, no doubt anxious to earn his pittance as soon as possible, rode her homewards

at a brisk pace, but had only proceeded about a mile and a half when she began to go sluggish, broke out in a profuse perspiration, and wanted to lie down on the road, so that it was with great difficulty she could be got into a farm-yard on the wayside close by.

The farmer administered the ordinary Colic draught, which gave relief, and she voided a quantity of bloody urine. I happened to be at the sale, and had to pass there on my way home; so I was called in. I found her standing, the breathing excited, pulse 75 and full, temperature 104·5°, belly tympanitic, with an uneasy, uncharitable look about her eye. When made to move she seemed quite stiff across the loins, so much so that she could with difficulty turn round, and which seemed to excite her and make her anxious to lie down.

I abstracted about a gallon of blood from the jugular, gave a five-drachm bolus, and rubbed a stimulating embrocation across her loins and belly. In walking her across the yard to a loose-box for the night she seemed to give way all at once, although she had been standing with her head tied up for an hour after being bled. She knuckled over at the hind fetlocks and became quite agitated, throwing herself down as soon as she got into the box. She remained down all night; next morning she seemed to be easier, would eat while down of maize or mangolds, but would touch nothing else. When pressed she got up, but was quite unable to stand, becoming quite agitated, and threw herself down as if the legs were unable to bear the weight of the body, knuckling over at the hind fetlocks, and turning out at the stifles as if the flexors and extensors of the hind legs were powerless to support the weight usually imposed on them. She continued in this condition for two days, getting up when pressed, becoming agitated when made to stand a few minutes, and throwing herself cautiously down again.

Gradually she began to stand for a few minutes, but it was in a very grotesque way, for one would have almost thought she was set on springs. She would come nearly to the ground—not in a lateral way—and suddenly get up again. About the third day the near hind leg assumed its normal condition, so that she could stand on it for some hours, then assume the recumbent

position. The appetite improved, and the urine assumed the normal colour and consistency, though it was rather scanty, but frequently voided, as if the bladder was suffering from some irritation. On the fourth day she was able to stand in a bullock-waggon, and was taken to the owner's home—a distance of four miles. Her progress towards recovery in the other leg was very slow, so much so that the owner, instigated by some of the Solons about, resolved to send her to the knacker—and it was only after a most emphatic asseveration from me that he changed his purpose. I was rewarded by complete success, and about three months afterwards she assisted in carting home his corn, and is now at work as if nothing had ever been wrong. The peculiarity of this case was that the spasm or paralysis was confined to the muscles of the hind legs, while those of the off leg became atrophied, and especially those of the anterior crural region—the elio-aponeuroticus, and the crural triceps, or vasti muscles. The great abductor of the limb—the biceps abductor femoris—seemed unaffected, for at every step the stifle was rotated outwards, as if dislocation of the femur from the pelvis had occurred. So much was this the case that a veterinary surgeon whom I took to see her after she was greatly improved, and who did not know the history of the attack, declared she was lame in the round bone. Another peculiarity of the case was that in backing she could use the leg pretty well, and when starting in a forward movement the stifle turned out and the os calcis came nearly to the ground. After she had walked a few steps a slight improvement was observable, seeing which I had her regularly exercised for half an hour thrice every day, until she was able to be turned out to grass, when she continued to improve rapidly, and the atrophied muscles were completely restored in three months, so that no one could tell that anything had ever been wrong.

The medical treatment consisted of stimulating embrocations to the atrophied muscles, and drachm doses of iron, nit. pot. and nux vomica twice a day.

A question of jurisprudence was likely to arise from the circumstances attending this case. Nearly all the people who knew of the circumstances believed that she had "been

drugged," as they expressed it, and said the owner should stop the cashing of the cheque he had tendered as payment until he saw if she recovered. It is exceedingly difficult to convince ignorant people that such effects can be produced in ordinary circumstances, and without the use of some mysterious medicaments which they fancy contain such potency for either good or evil. I was able to convince him that my evidence would be against such a course, and he desisted from the attempt.

Comments.—In all these cases there is a similarity of symptoms indicating an identity of nature, as well as different manifestations tending to disguise it. They were characterised by an increase of temperature, discharge of blood-coloured urine, violent clonic spasms, succeeded by an inability to maintain the standing position. They were all animals which had reached maturity, had been well-fed during a period of repose,—succeeded by a certain amount of exercise, and having more or less of a nervous temperament. In all, the urine presented the same appearance, and which, taken in conjunction with the violent spasms and loss of motor power in the posterior extremities, may be regarded as pathognomonic of the affection. In the second case, the muscles of the abdomen and inferior cervical region were principally involved, giving it an emprosthotonic appearance; while in case 4 the muscles of the femoral region were most prominently affected; and in the first and third cases the muscles of the lumbar and gluteal regions were those implicated. From this it would seem that the muscular elements of the body are those most affected in the pathological condition we are considering. But that they are primarily affected by the oxidized albuminoids acting upon their inherent irritability, like a chemical agent, as suggested by Professor Williams' theory is, I think, open to grave doubt, and scarcely seems probable when we consider the chemical phenomena of muscular exertion, and the source of urea as eliminated by the kidneys, or the symptoms of its suppression in case of disease or extirpation of the latter.

This theory is founded upon the opinion that the supply of nitrogen to the system is directed to, or attracted by, the great nitrogenous structures of the body—the muscles—and that their

action furnishes the bulk of the discharge; and anything limiting their action causes an accumulation of it in the body, which, by some inexplicable process, produces spasm of them and its results. But it is now universally believed that the action of muscle causes little, and some observers think, no change in the elimination of nitrogen, either in the form of urea or creatin.

If Azoturia be so produced, it should certainly be much more common than it is, and should have been recognised long ere now; it ought also to be present in ruminants and other highly-fed animals. There seems something crude in the explanation that the animal system is always receiving a surplus, which it can only get rid of by muscular exertion; and it is not at all likely, but the reverse, that albumin, by simple exposure to oxygen, even in the body, would be thus easily converted into urea; for it is evident, from all the facts of physiology, that the conversion of albumen into urea is not merely oxidation, but is connected with the vital actions going on in the body.

If we admit the direct irritability of muscular tissue, there is little difficulty in explaining the phenomena of Azoturia; but this we can scarcely do, judging from the physiological properties of the muscular elements. It is scarcely possible to conceive that the great muscular elements of the body can act in such a manner, without being acted upon themselves. Now, we know that the only influence capable of producing such contractions is the influence of the nervous system; and that this system is the first affected may be considered proved from the acuteness of the attack, the phenomena observed, and the frequently sudden disappearance of them.

One of the earliest and most prominent symptoms of this disease is the sudden increment of heat, manifested in the profuse perspiration that invariably accompanies it. Preceding the profuse perspiration, there may be frequently observed a muscular and nervous languor, and which I think has a nervous origin—which leads to the increased destruction and elimination of nitrogenous elements by the kidneys. Tetanus, which is undoubtedly a neurosis, is always attended with a high temperature, but not necessarily an increase of nitrogenous elimination; and in Chorea, which simulates Azoturia, there is often

great muscular exertion, and no extra excretion of urea or nitrogenous elements and an increase of heat. Hence I think we may conclude that the nervous system is primarily involved in this disease, and that, after all, Mr. Haycock was not very far wrong in terming it "Hysteria"; only that it occurs in other animals than those possessed of a uterus.

The case recorded under this heading in THE VETERINARY JOURNAL for December, by Mr. Olver, of Tamworth, is evidently one of the nature of Azoturia; of the same nature are the cases quoted by Mr. Dacre, in his paper on the Dosimetric System of Medicine, which are recorded by Mr. Landrin in the Therapeutical Society's Journals as cases of "Spontaneous Paraplegia." The word "spontaneous" applied to diseases of our patients is an absurdity, for it means the action of the will in inducing or producing any physical effect or condition. One would have thought our French brethren would have been more logical in their terminology, as well as farther advanced in their pathology; for they evidently fix on the most prominent symptom of the disease as indicating its nature, taking, as it were, effect for cause.

Nor do they seem very far advanced in the science of therapeutics, if we may judge from Mr. Dacre's description of Professor Burggraeve's dosimetric theory, which likens the living body to a delicate balance, where all that is wanted to restore equilibrium is to throw into the light scale fractured parts of matter called "medicine."

This theory seems altogether too mechanical, and altogether ignores the vital powers and individual idiosyncrasies; for he tells us that "it is the last dose which brings about the desired result," somewhat after the fashion of a retail druggist weighing out some active poison with the minutest exactitude. Now, if it be "the last dose which brings about the desired result," one is tempted to ask, why not give the last dose first? In short, it seems to me to be nothing more than our old friend "Homœopathy" resuscitated and rechristened.

I digress, however. The point I wish to direct attention to is the fact that this so-called "Spontaneous Paraplegia" is neither more or less than well-marked acute cases of Azoturia, and

whether they were cured by the last granule of medicated matter or the first, they would in all probability have recovered just as soon with an aloetic purge, followed up by some ordinary tonic and neurotic medicines.

And further, that they regard them as of nervous origin, and that the nervous system is principally and primarily implicated, is a point at which our opinions meet and coincide.

But the problem remaining to be solved is the nature and seat of the lesion or condition of the nervous system, which forms the primary morbid condition in Azoturia.

In each of the cases I have recorded, as well as those related by our French friend, there were decided manifestations of disordered nerve-action; and not only so, but the disordered nerve-action was the most obvious, the earliest, and the most striking symptom of the disease. And further, that if any of the cases of it are prolonged beyond forty-eight hours or more, the deficiency of nerve power to a particular set of muscles is still the most characteristic symptom, even long after the urine has assumed its normal condition and consistency.

The uræmic condition of the urine is simply the result of the pathological condition; much in the same way as sugar in that fluid is the result of the peculiar condition of the nervous system, as lately set forth by Dr. Pavy in "diabetes mellitus."

The abnormal heat developed in the early stages of this disease, as well as during the exacerbations of it, point clearly to its nervous origin, as well as its frequently sudden remissions. How the nerve texture is affected or acted upon we are still in profound ignorance. There is little doubt but that the composition of muscles, and no doubt also of nerves, is greatly influenced by the nature of the nitrogenous substance brought to them in the food; and that when it assumes any different physical state than that in which they are accustomed to assimilate it, it becomes unfit for the functions of the muscles or nerves,—they can no longer contract or transmit nervous currents. The first failure of nutrition—the loss of power to attract—must be owing to deficient action on the part of the nerves—muscular incapacity being one of the most prominent signs; and it occurs so early in the disease that it can hardly

depend upon nutritional damage to the muscles, but must be owing to some paralytic condition of the nerves.

There is still so much unknown regarding the phenomena of diseased and healthy nutrition, that we may be excused from pursuing the subject farther. But we trust that the cases recorded, and the remarks made, may induce some one with more time and better opportunities to investigate the subject. We also hope that we may not be considered presumptuous by such an eminent authority in questioning his conclusions on this topic, or unprofitable to the reader of the Journal by thus subjecting them to this negative criticism.

Editorial.

RABIES IN ENGLAND.

RABIES continues prevalent in various parts of England, and appears to be somewhat inclined to spread again. The alarming disease is always more common in the midland and northern than in the southern, eastern, or westen counties. Nevertheless, it has more or less domiciled itself in the south, and mad dogs are frequently reported as seen or destroyed in different parts; while deaths from Hydrophobia are, we regret to observe, occasionally notified in the public or medical journals. Loss from Rabies, due to the bite of rabid dogs, is also not seldom alluded to as occurring among other animals; but owing to the absence of any attempt to collect statistics with regard to this serious contagious disorder, we have no means of arriving at any notion as to the amount of destruction it occasions. Indeed, it is only by chance, as it were, that we hear of outbreaks of Rabies. No cognisance is taken of it and some other grave and transmissible diseases of animals, by the Veterinary Department of the Privy Council; and we are therefore compelled to depend upon chance rumours as to outbreaks and losses of more than usual severity.

Until the measures necessary for the suppression of Rabies are thoroughly understood, and generally and rigidly enforced, there can be no hope of immunity from its ravages; and such measures should be promulgated by the Government and carried out under Government surveillance. Rabies is a far more serious affair, surely, than Foot-and-Mouth Disease, as it imperils the existence of all other animals, and may infect man with a most painful and fatal malady! And if we are to receive the opinions of the most advanced Veterinary pathologists

with credence, we can extinguish the one disease as readily as the other. Perhaps some day, when Veterinary Sanitary Science is better understood and appreciated than at present, Rabies will be included in the list of those inflictions which can and shall be dispensed with; and though their control or extinction may cause a little trouble and expense, yet we fancy it will be found profitable, tranquilising, and otherwise satisfactory to be without them, or at any rate in a position to limit their extension when they do appear.

What we most urgently require as a preliminary matter in this direction, is information with regard to the prevalence of Rabies, and systematic inquiries as to the origin of local outbreaks.

Within a comparatively short period, several packs of hounds have been visited by the disease, and this has necessitated either their partial or complete destruction—which is always a most inconvenient and lamentable occurrence, and has caused alarm. At present, the "meets" of the East Sussex Foxhounds are suspended, in consequence of the appearance of Rabies among them, and which has caused the death of several. Her Majesty's Buckhounds have also ceased their "meets," owing to an outbreak of the disorder. It may be mentioned, however, that there are doubts as to the malady affecting the latter pack being Rabies. The notorious Dr. Shorthouse, of Turf proclivities, and who is only known to us as the defendant in a now celebrated case of libel in which the late Sir Joseph Hawley was the plaintiff, pronounces it to be "kennel madness"—whatever that may signify, unless it be Rabies. In a scurrilous and unworthy article on Rabies which appeared in *Bailey's Magazine* in 1869, the only novelty not to be found in books on the subject is with regard to this supposed "kennel fever." It is thus alluded to:—

"There is a disease which ought not to be, though it sometimes is, confounded with Rabies. I allude to an endemic (*sic*) disease which occurs occasionally amongst hounds. It bears no relationship to Rabies, but is a specific kind of fever, and is known as 'kennel madness.' But this disease is totally different from Rabies, and human beings bitten by dogs in this state run no risk of Hydrophobia. When attacked with this disease the hounds are in a frenzied state, bite and savage each other, and are perpetually quarrelling. Mr. Heathcote's staghounds suffered from this malady during the present spring and had to be destroyed. I have shown that a dog afflicted with Rabies is not by any means a quarrelsome customer."

But as the writer of this article makes the naïve confession, "My own experience in the matter is not worth a straw," we may set down "kennel fever" as a product of his own peculiar imagination, and his statements as not only valueless, but pernicious.*

* We regret to observe that *Bell's Life*, for December 7th, has soiled its pages by republishing the vulgar and disreputable article above alluded to. That our strictures are justified, we give the following extracts as evidence:—"Many years ago the late Mr. Youatt, a veterinary surgeon, who compiled books for the Society for the Diffusion of Useful Knowledge, published an account of upwards of four hundred cases of persons who had been bitten by dogs distinctly rabid, and to whom he had applied lunar caustic with entire and complete success, and without the loss of a case. Mr. Youatt further stated that he had himself been bitten by mad dogs seven times, and that he had operated with the caustic with complete success. Now, I do not hesitate to brand that statement, as I have branded it some years ago, as an unmitigated falsehood. It bore the stamp of a lie upon the face of it.....If Mr. Youatt had

We would esteem it a favour, and as a great advantage to Veterinary Science and the country, if those members of the profession who have the opportunity would send us notice or notes of outbreaks or cases of Rabies. In this way we may accomplish a task which certainly should devolve upon the Veterinary Department of the Privy Council.

THE TITLE OF VETERINARY SURGEON.

As the period draws near when steps should be taken to obtain a legal protection to our title, we may be pardoned for once again drawing attention to the matter, and noticing some additional remarks made by the editor of *The Field* in commenting on our article in the JOURNAL for last month. This closes the discussion—if such it may be called—with our esteemed contemporary, and we trust the views and wishes he entertains on our behalf may widely prevail, and that our aspirations will be shortly realised:—"A few weeks ago we made some remarks in reference to the subject of protective legislation in the matter of the professional designation of members of the veterinary profession, quoting, in the course of our article, some observations of the learned editor of THE VETERINARY JOURNAL, who writes as follows: 'We are inclined to think that the editor of *The Field* has not been sufficiently acquainted with all the facts of the case when he states that the term Veterinary Surgeon has so long been, by public consent and the might of possession, the property of all who treat the diseases of animals, that it will be useless to try to divert it to a section of those persons, however good their claim may be. The history of veterinary medicine is but a brief one, so far as England is concerned, and a small amount of inquiry will, we feel assured, convince him that the term has never been, either by public consent or the might of possession, the property of *all* who have ministered to the diseases of animals.' We stated in the course of our observations that 'Veterinary Surgeon' was a common title in this country long before the charter attempted to make it the exclusive property of members of the College; and as the editor of THE VETERINARY JOURNAL, whose authority in

said that he had caused four hundred healthy dogs to be bitten by a few mad ones, in order to try the efficacy of caustic directly after the bites were inflicted, and that they had all escaped Rabies, we should have had almost as much difficulty in swallowing that as a hydrophobic patient in swallowing water; but still, after a few efforts, we might, perhaps, have gulped it down, even if we had vomited afterwards. But that four hundred human beings would quietly submit to be experimented upon by mad dogs, in order to try the efficacy of Mr. Youatt's caustic, or that, in the ordinary course of events, they could have been accidentally bitten, and all found their way, within a few months' time, to one man, is rather too much of a crammer. Hydrophobia itself is nothing to that. But veterinarians are generally loose fish; their books are fallacious, and their facts will not bear the test of truth or the light of day."

We may well confess astonishment that any journal pretending to respectability should allow such slanderous stuff to see the light in its pages. We do not require to defend the reputation of the profession, nor yet of the late Mr. Youatt. His name is known in every English-speaking country as a reliable authority, and his works have been translated into almost every European language. Besides, his name remains on the Register of the Royal College of Veterinary Surgeons, and this would assuredly not be the case if he had suffered a term of imprisonment for promulgating a libellous falsehood.

matters of veterinary history no one disputes, states that the term 'Veterinary' was introduced into our language from France in 1790, and that the words 'veterinary medicine and surgery' occur in a resolution of the Odiham Agricultural Society, at a meeting held in that year at the Blenheim Coffee House, London, while the charter was not granted till 1844, we cannot admit that our remark was incorrect; but, as we have before stated, we do not intend to dictate to the veterinary profession in the matter of the title by which they decide to be recognised. We readily admit that the members who have studied at a college, at considerable cost of money and more valuable time, and have passed an examination, have a right to be known by a title which persons wanting such qualification shall not be allowed to assume with impunity; and we entirely sympathise with the attempt to obtain an Act which will give the veterinary profession a status which it has not in this country yet reached. We notice that in France a strong expression of opinion has emanated from the most influential veterinary societies against the tolerance which has been accorded to unqualified practitioners. In this country, however, it is not possible, at any rate for the present, to prevent an unqualified man from treating diseases of animals if the owners choose to employ him—in fact we know, from the frequent complaints of our correspondents, that large districts in the country are without qualified practitioners, and under such conditions it would be futile to attempt to repress the empiric by legislative means. But we are quite prepared to admit that the veterinary student should have something better set before him, by way of compensation for his preparatory work—which year by year becomes so much more arduous and more costly—than a name which his groom may, if he thinks fit, assume, in contemptuous ridicule of his master.

"Veterinary surgeons are not a numerous constituency, and their influence in Parliament may not be very great, but if it can succeed in convincing the stockowners of this country that their interests are intimately blended with those of the veterinary profession, we shall enlist a power which will render easy of attainment the object proposed by the editor of THE VETERINARY JOURNAL."

THE VETERINARY DEPARTMENT OF THE ARMY AND ACTIVE SERVICE.

IN commenting on the new warrant for the Army Veterinary department, issued some eight or nine months ago, we pointed out that, though by the terms of that warrant some improvements had been effected in the position of veterinary officers, yet several serious grievances remained unredressed, and we expressed a hope that they would receive early consideration. Among these causes for complaint were specified the absence of distinguished service rewards or pensions, the withholding of honours or other recognitions of merit for service in the field—such as are generously bestowed on the officers of every other department during or on the termination of a campaign, and the prohibition from presentation at Court. Veterinary surgeons labour under a deep sense of injustice at the anomalous position they are compelled to hold with regard to these matters; and feeling that their claims are ignored by those who have it in their power to adjust them, we can scarcely wonder at the

existence of a certain amount of lukewarmness in volunteering for active service in the field. A weekly contemporary, under date December 7th, remarks: "As we stated last week, a number of senior veterinary officers are required for service in India; but as yet only one has volunteered, as it is said, and with perfect justice, that there is absolutely nothing to induce a veterinary officer to leave his wife and family, and undertake duties in the discharge of which he may find his constitution completely ruined and himself unfitted for further service. There are neither promotions, distinguished service rewards, or honour to be gained. Under the circumstances it is not, perhaps, to be wondered at that the head of the department expresses his belief that it will be perfectly hopeless to look for volunteers from among the senior members."

Of course, if officers are ordered to go on service they must either obey the order—however unwillingly—or leave the army. In the former case there must be a regular roster or list prepared; for it would be a monstrous injustice to select only the best men for every campaign, and leave the less competent at home. It would be simply punishing the most efficient men of the department because they were the best, and placing a premium on incompetency, indifference, or idleness. Such a procedure would be most impolitic in these days, when candidates are so scarce and the army holds out such slender inducements for them to join; and we venture to predict that in a short time not a good man would be found in the department. But place veterinary officers on the same footing as those of other departments, with regard to honours and rewards, abolish the unmerited indignities and slights to which they are now subjected, and give them something to hope and to strive for, and it will quickly be found that they yield to none in a desire to do good and loyal service.

There will then be no lack of volunteers of the right sort, and the head of the department will be no longer forced to make such a painful confession as on this occasion.

Veterinary officers have complained bitterly that on every campaign in which they were engaged—no matter how well they may have done their duty, nor how highly their claims may have been acknowledged and recommended by the generals under whom they served—they were always left out in the cold, when others who had no stronger title to recognition were amply rewarded. The Crimea, Indian Mutiny, China and Abyssinia testify to the justness of their complaint; and we can scarcely doubt that the present wars at the Cape of Good Hope and in Affghanistan will add to the many cases of injustice lurking in the memory and burning in the heart of those who would be glad to forget grievances under an amended state of affairs. We ourselves can testify to the galling disappointments and hardships resulting from volunteering for active service as a veterinary surgeon. The army has nothing but loss to sustain—so far as the veterinary department is concerned—from the ungenerous and unfair treatment to which veterinary officers have to submit. This treatment is not experienced in the field—on the contrary, generals in command of active army corps acknowledge the services of their veterinary officers as worthy of recognition and recompense. It is at home that claims are persistently ignored or put to one side, and it is from the home authorities that these officers have to look for justice. With his Royal Highness the Field Marshal Commanding-in-Chief as President of the Royal Veterinary College, army veterinary surgeons would be inclined to believe that in his hands their claims would receive favourable consideration; and we can scarcely doubt that if their case were fully represented it would be fairly and impartially examined, with a result satisfactory to those who are now malcontents, and decidedly averse to volunteer or make needless sacrifices in serving their country. An old-fashioned prejudice appears to exist

in certain high quarters against veterinary surgeons in the army, and the absence of "precedent" is, we fear, only too often made the pretext for indulging that prejudice. But it must be remembered that army veterinary surgeons are now a very different class to what they were thirty or forty years ago, and treatment which they would have endured then is not likely to be satisfactory in the present day.

Proceedings of Veterinary Medical Societies, etc.

THE CANINE RACE, EMBRACING THE LEADING CHARACTERISTICS OF THE DOG, HIS RELATIONS WITH MANKIND, HIS CLAIMS ON HUMANITY, ETC., ETC.

BY MR. JOHN WOODROFFE HILL.

THE usual weekly free lecture in connection with the Wolverhampton Free Library was delivered on November 30th, at the Assembly Room of the Agricultural Hall—subject, "The Canine Race," which was treated in a highly interesting, instructive, and practical manner by Mr. John Woodroffe Hill, F.R.C.V.S. The room, which seats 400 persons, was inconveniently crowded, the audience including a number of ladies.

The Earl of DARTMOUTH, who presided, and who was very warmly received on rising to introduce the lecturer, said he should not detain those present many minutes from the pleasure of hearing Mr. Hill's lecture, which he was quite sure would be of a very agreeable and instructive character. From the attendance on that occasion, he was pleased to see that there were many persons in the neighbourhood who took an interest in dogs. For himself, he could only say that the moment Mr. Hill asked him to take the chair on that occasion he readily acceded to the request, both because he (Lord Dartmouth) took a great interest in the subject of the lecture, and because he was anxious to show his sympathy with that institution under whose auspices the lecture was to be delivered—(hear, hear). He was quite certain that any of them who knew what it was to have a dog always about them, and had found how reasonable—and he used the words advisedly—how agreeable, and how almost indispensable was the companionship of such animal when they became used to it, would agree with him that they were about to hear something on a very congenial subject. He had said that the society of a dog became almost indispensable, and in proof of this he grieved to say that he had upon some occasions found it a very hard thing indeed to dispense with the society of such companions. Under an old tree at Patshull there was a small cemetery in which were headstones recording not the virtues, but simply the names of departed canine favourites which were buried underneath; but in referring to this he felt he was treading upon tender ground, and he would therefore spare the feelings of his audience and himself, and call upon the lecturer.

Mr. HILL, who rose amid applause, said:—

My Lord Dartmouth, Ladies, and Gentlemen,—It affords me sincere pleasure to respond to the invitation I have been honoured with to deliver you a lecture on a subject so deeply interesting to myself, and I would fain hope, to all here present; for the animal concerning which my lecture treats

of must, I am sure, hold a place in the heart of every sympathiser with the brute creation.

The few thoughts which I have put together for your consideration this evening are, compared with their title, brief. "The Canine Race" is an extensive subject, one which would occupy more than the time usually given for these lectures to do it justice. On this occasion, therefore, my feeble efforts will be more mainly directed towards the enlistment of your regard, or, I would rather say, to strengthen that regard, for a dumb but surpassingly intelligent and noble animal.

Probably there is no country in the world in which the dog, man's best dumb friend, is so much esteemed, his purity of breed so jealously guarded, his natural instincts so much encouraged, and his general welfare looked after, as in England. The enormous revenue accruing from the Dog Tax proves this love of the canine race. The establishment of the Dog's Home in London also speaks volumes: here the very essence of humanity is fully displayed. Poor wandering animals—homeless, from straying, being cast out, neglect, brutality, theft, and numerous other causes, are carefully, humanely, and indeed, affectionately looked after. No fewer than 4,200 stray dogs were restored by the manager of this asylum to their former owners, or provided with new homes, during the twelve months ending December last. And this worthy institution, I should tell you, was founded by a lady. Mrs. Tealby—all honour be to her name. What a lesson to some of the human race, this noble regard for the lower portion of God's creation! The following verse of a poem which recently appeared in that monthly advocate of humanity, *The Animal World*, well bespeaks the love which prompted such thoughts :—

"'Nobbet a dog!' Ah wish your friends
May pruive as true ta ye,
As my auld fower-fuited friend
Was ivver true ta me."

Some persons are apt to look upon the dog as simply a useful article, or may be a necessary evil; he is appreciated in a lonely district as a protective agent, but there his valuable attributes close. From year's end to year's end, the chain and kennel are his only companions, no kind word, no caress is bestowed upon him: a threat or a kick, a blow or a curse, are his reward should he bark at a friendly visitor. On the contrary, be the intruder a beggar, he is an excellent watch, and encouraged in his warning. An old proverb says, "A dog will bark as he is bred." In some the power of discrimination is wonderfully acute: an evil-looking individual is recognised at once, and warned not to approach; while a well-dressed, respectable person is allowed to proceed with merely an inquiring look on the part of the dog. But in some instances, even a good dress and air of respectability will not delude canine penetration. *Is this instinct or reason?*

In whatever light we may regard him, whether as a useful article or a necessary evil, there are times when even man, however great his antipathy to a dog may be, is compelled to accept the friendship and acknowledge the boon of a canine companion, be it only the veriest cur; and nothing to my mind more strikingly illustrates this fact than the dependence of a human being with sightless orbs on the protection and guidance of his dog. With what affectionate solicitude is this duty performed by the four-footed friend! how patiently he awaits his afflicted master's desires! Hour after hour, in the most inclement weather, the faithful guide is content, though shivering with cold, and maybe suffering the pangs of hunger, to remain with his charge and fulfil cheerfully his trust.

Youatt well observes, "The dog is the only animal that is capable of dis-

interested affection. He is the only one that regards the human being as his companion, and follows him as his friend: the only one that seems to possess a natural desire to be useful to him, or from a spontaneous impulse attaches himself to man. We take the bridle from the mouth of the horse, and turn him free into the pasture, and he testifies his joy in his partially recovered liberty. We exact from the dog the service that is required of him, and he still follows us. He solicits to be continued as our companion and our friend. Many an expressive action tells us how much he is pleased and thankful. He shares in our abundance, and he is content with the scanties, and most humble fare. He loves us while living, and has been known to pine away on the grave of his master."

There is to me something touchingly generous in canine disposition. No animal is so ready to forgive an injury or acknowledge a benefit as the dog. Punish him how you will, speak as angry as you may, and as he sneaks away, cowed, ashamed, or submissive, one kind word, one pleasant look, will bring him crouching to your feet with a face full of gratitude and joy; and he will demonstrate in his affectionate licking of your feet and hands, how much he appreciates human kindness, and return tenfold, in his own dumb but expressive way, one trifling act of goodness on the part of his master and friend.

In a painful case which recently came under my care, I was particularly struck with this canine trait. The poor animal was suffering from a dreadful compound fracture of the fore-leg, portions of bone protruding through the skin; with such a fracture it was hardly reasonable to expect a cure, especially as some hours had elapsed before I saw the sufferer. But still I tried to save the limb, always bearing in mind that an imperfect limb, if useful, is better than none at all; so after the necessary removal of certain portions of bone, I adjusted the injured member and placed it in splints. For weeks the poor animal bravely bore its pain; union, however, was beyond nature's accomplishment, and as the patient was a favourite, amputation was decided upon. This I performed under chloroform, and after the operation the patient was placed in its basket and taken to the kitchen. Shortly afterwards, when I had occasian to go into the front sitting-room, I found to my astonishment my three-legged patient on one of the chairs, lying on the coat I had worn during the operation. She was removed at once back to her basket, and the coat placed on the sitting-room table; again she made her exit, and was found on my coat on the table. For the second time I removed her, and hung the garment up in the room on the bell handle by the side o the mantlepiece; but on the first opportunity she again came, though she could not lie down upon it. She jealously guarded it, and her mute expression of gratitude on my approach more than told me what she felt. Never before had she shown any inclination to leave her usual place, but now nothing would prevent her,when an opportunity occurred, of placing herself in the closest proximity to the coat I had worn when relieving her of the offensive and painful limb.

Yes, the sagacity, fidelity, and gratitude of the dog is superior to that of all the other lower animals. I could relate to you marvellous anecdotes of this, did time permit. Most of you will doubtless have read those beautiful lines of Sir Walter Scott's concerning a faithful dog, reduced to a skeleton, and who had for three months jealously guarded the remains of his master, who had lost his life by falling from one of the precipices of the Helvellyn mountains :—

> "Dark green was the spot, 'mid the brown mountain heather
> Where the pilgrim of nature lay stretched in decay;
> Like the corpse of an outcast abandoned to weather,
> Till the mountain winds wasted the tenantless clay;

Nor yet quite deserted, though lonely attended
The much loved remains of her master defended,
And chased the hill-fox and the raven away.
How long didst thou think that his silence was slumber?
When the winds waved his garments how oft didst thou start?
How many long days and long weeks didst thou number
Ere he faded before thee, the friend of thy heart?"

Abundant are the stories told of canine love, and long is the list of human lives saved through their wonderful agency—an amount of bravery and thoughtlessness of self being displayed, such as would make many a human being blush with shame. What cares the Newfoundland dog how high the waves may be, or strong the tempest, when he sees a life in jeopardy; or the bull-dog the heat of flames, or strength of opposition, in attaining his object? Then, again, there are those who exhibit their love in a less demonstrative way, but with an equal claim on our admiration, as the following record will testify:—

"The day after the battle of Fredericksburgh, 1862, there was found a wounded soldier prostrate and motionless, and apparently quite dead. Lying by his side, with its head upon his master's neck, was a dog. As the friendly stranger approached the touching scene, the faithful animal merely raised its eyes and wagged its tail, but *did not alter its position*. How was this to be explained? The dog did not growl, did not move, but the anxious expression of its countenance convinced the official visitor of this field of carnage, that though the man was badly wounded, the vital spark had not fled. On examination, it was found that a large bullet had pierced the throat of the soldier, and faint from loss of blood, he had fallen where he was found. His dog, his companion and preserver, was instinctively, or shall we not rather say Providentially, doing the best that *human skill* under the circumstances could have done; *he had laid his head across the wound* softly and securely, and thus completely arrested the flow of blood by *gentle and continuous pressure*, and the shaggy velvet coat of the faithful dog, saturated and thus hardened, stopped the flow of blood from the wound and saved his master's life."

My friends, many a golden lesson might be learned from "the canine race," and an ungrateful world taught more fully to appreciate the many mercies a Higher Power has vouchsafed to it, but which it is only too apt to look upon as *matters of course*, or the result of *chance*.

"Often," says Burchell, speaking of his travels in Africa, "in the silence of the night, when all my people have been fast asleep around the fire, have I stood to contemplate these faithful animals watching by their side, and have learned to esteem them for their social inclination towards mankind. When, wandering over pathless deserts, oppressed with vexation and distress at the conduct of my own men, I have turned to these as my only friends, and felt how much inferior to them was man when actuated only by selfish views."

Youatt again observes, "Of the staunchness and incorruptible fidelity of the dog, and his disregard of personal inconvenience and want, when employed in our service, it is impossible to entertain a doubt. We have sometimes thought that the attachment of the dog to its master was increased, or at least the exhibition of it, by the penury of the owner; at all events, one fact is plain enough, that while poverty drives away from us many a companion of our happier hours, it was never known to diminish the love of our quadruped friend."

"Man," says Burns, "is the God of the dog; he knows no other. And see how he worships him—with what reverence he crouches at his feet, with

what reverence he looks up to him, with what delight he fawns upon him, and with what cheerful alacrity he obeys him."

Buffon says of him, "To his master he flies with alacrity and submissively lays at his feet all his courage, strength, and talent. A glance of the eye is sufficient; for he understands the smallest indications of his will. He has all the ardour of friendship and fidelity and constancy in his affections which man can have. Neither interest or desire of revenge can corrupt him, and he has no fear but that of displeasing. He is all zeal and obedience. He speedily forgets ill-usage, or only recollects it to make returning attachment the stronger. He licks the hand which causes him pain, and subdues his anger by submission. The training of the dog seems to have been the first art invented by man, and the fruit of that art was the conquest and peaceable possession of the earth."

The dog, gentlemen, has his thoughts, just as much as you or I; indeed, he is very imaginative, and his retention of memory is also wonderful. No matter how great the lapse of time since you parted, your favourite will recognise you immediately; and should old age have dimmed his sight, his sense of hearing will enable him to know you, and if this has also failed, the old familiar sniff when you are in his presence will convince him his memory has not proved treacherous.

Twenty years Ulysses and his favourite dog Argus had been parted, and when after this long interval the monarch wended his way home disguised as a beggar, his old faithful dependent, though still true to his memory, was so worn down with age, hardship, and care that he was unable to penetrate his master's disguise, and the honour was left to his four-footed friend, for—

> "Near to the gates, conferring as they drew,
> Argus, the dog, his ancient master knew,
> And, not unconscious of the voice or tread,
> Lifts to the sound his ears, and rears his head.
> He knew his lord, he knew, and strove to meet;
> In vain he strove to crawl and kiss his feet;
> Yet, all he could, his tail, his ears, his eyes
> Salute his master, and confess his joys."

A dog's knowledge of locality is perhaps still more wonderful. Miles and miles may be traversed by road, rail, or water, and yet faithful to his first attachment, the animal will find his way home, and with a rapidity almost incredible. Yes, whatever opinions may be advanced as to his origin, whether descended from the wolf, fox, or jackal (all of which are purely speculative opinions, inasmuch as there are wild dogs in Australia, America, and almost every habitable region of the globe), he is the firm and faithful friend of man, superior in sagacity and courage to all his dumb companions, and a noble gift of our Creator. "If," says Youatt, "any of the lower animals bear about them the impress of the Divine hand, it is found in the dog. Many others are plainly and decidedly more or less connected with the welfare of the human being; but this connection and its effects are limited to a few points, or often to one alone.

The dog, different, yet the same in every region, seems to be formed especially to administer to our comforts and to our pleasure. He displays a versatility, and yet a perfect unity of power and character, which mark him as our destined servant, and, still more, as our companion and friend. Other animals may be brought to a certain degree of familiarity, and may display much affection and gratitude. There was scarcely an animal in the menagerie of the Zoological Society that did not acknowledge the superintendent as his friend; but it was only a casual intercourse, and might be dissolved by a word or a look. At the hour of feeding, the brute principle reigned

supreme, and the companion of other hours would be sacrificed if he dared to interfere; but the connection between man and the dog, no lapse of time, no change of circumstances, no infliction of evil can dissolve. We must therefore look far beyond the wolf for the prototype of the dog."

Cuvier observes, "Each individual is entirely devoted to his master, adopts his manners, distinguishes and defends his property, and remains attached to him even unto death; and all this springing not from mere necessity, or from constraint, but simply from gratitude and true friendship. It is the only animal that has followed the human being all over the earth."

His indomitable pluck rendered him invaluable in days of yore, and though held generally in abhorrence by some sects, there were those who venerated and deified him. The Egyptians, Greeks, and Romans all paid honour to the canine race; and can we at the present day wonder at it, we who have made them a subject of science as well as favouritism, of interest and domestic study, observing in each new pet that comes to our hearth some fresh cause for admiration, some theme for conversation, some food for thought?

We know this animal is influenced by the same varied passions which affect ourselves. Joy, gratitute, hope, fear, hatred, jealousy, are all in some manner exhibited. Are not the ears, those appendages *Fashion* is so fond of removing, full of expression? Alarm, excitement, watchfulness, are each denoted by their different attitudes; remove them, and the beauty of the countenance is lost. The tone of voice is also significant of anger, pleasure, fear, or pain. Whilst the eyes may beam with gratitude and love, be lustrous with watchfulness, dim with sickness, or gleam with hatred and jealousy—and finally the lips can be contorted savagely, or as an expression of satisfaction. Indeed I have, without exaggeration, seen this latter nearly approach a smile. A dog of my own always displays his teeth as a token of pleasure, and each member of his stock has been invested with the same peculiarity, one of which bears the name of "Smiler" on that account.

The old proverb which runs—

> "A woman, a dog, and a walnut-tree,
> The more they are beaten the better they be,"

is one, I am sure, you will all take exception to so far as the two first are concerned. We should not desire to implant fear or hatred by a slave-driving process in woman or dog. It is far better to encourage love by acts of kindness and judicious management, than a species of devotion or *false love* from dread of punishment. A thrashed hound, dreading the consequence of disobedience, will slink behind his master, a look from the latter being sufficient to make him crouch to the earth and tremble. A woman may in like manner follow her lord under much the same state of affairs, only that occasionally she shows she has some spirit within her, and has her own—it may be wilful—way; while the poor dog ever tamely submits, perhaps the better policy of the two. But this is tender ground to tread on, so I will not venture further. Do not, however, misunderstand me. I am not condemning just and reasonable punishment in dogs, but I do strongly discountenance excessive punishment, or that which is unmerited, in other words—*brutality*.

"Anger," says the proverb, "punishes itself;" and again, "A man of cruelty is God's enemy." How quick with the whip, how slow to reflect, are frequently those who punish dumb animals—animals with feelings akin to our own, but no words to plead for pity. There is a method in madness, and doubtless a breaker will tell us there is a method in teaching, but he seldom adds, there should be *mercy* in the method. I do not find the latter ingredient to exist when I witness a person of this profession with a slip noose cord round a dog's neck, and half strangling him in the sudden jerk back at each word of

command. But the old proverb, I suppose, would come in here, "There is more money got by ill means than good acts;" and if we remonstrated, we should be probably answered—the end justifies the means.

So far I have only alluded to the dog as a companion and friend of man, and his worthiness to occupy such a position. But there are other duties he has to perform, and for which he is highly prized—viz., in the various sports, as the chase, coursing-ground, shooting-ground, destruction of vermin, the guarding of sheep, and the keeper's help; while in Northern countries he is used for drawing sleighs, as a protection against the bear, and a guide to the traveller.

There was a time when this noble animal was employed to hunt down slaves. Thank God this unnatural training to thirst for the blood of their ordained protector is a thing of the past!

Excepting the latter, all these duties he so ably performs as to clearly show that the dog is an essential companion of man; and it is just as reasonable, aye imperative, that we should look to his comfort and well-being, as we should of any other servant belonging to us.

Speaking of comfort brings to my mind the matter of muzzling dogs. I always think when I read or hear of an official order for the imposition of this punishment, What a pity it is the gentlemen who issue the order cannot have a similar cruelty inflicted upon themselves! I cannot conceive how any humane person, however patent and improved the invention may be, can confine his favourite's head from morn till night in a muzzle. We are told the dog can breathe, open his mouth, lap water, etc., with a wire muzzle on. So might we with our head in a cage strapped securely to our necks; but how should we like it? The very fact of annoying a dog with such an unnatural incumbrance is the very means for producing, through excitement, fear, and anger, what we wish to avoid—an irritable, snappish, and surly dog.

Of course, in certain surgical operations the muzzle is necessary to prevent the patient licking or gnawing the parts; but it is only under such circumstances as these that it should be tolerated.

It was not my intention, when I commenced this lecture, to introduce the subject of disease; but there is one malady to which our canine friends are liable—a malady so awful in its nature that it may be truly designated *the scourge* of "the dog world,"—and as the fearful results attendant on it prevent many a person who would otherwise love to have a dog, keeping one, I think a few words relative to the malady will not be here out of place. I allude to Rabies, termed in the human subject Hydrophobia. Now let me earnestly ask you to believe this: That not one tithe of the newspaper reported cases of the above, as regards adults, are such—at least, that is my opinion. A person of extreme nervous sensibility, who has had the misfortune to be bitten by a dog, and is always thinking throughout the day, and dreaming throughout the night, of the probable or possible consequences, till the nervous system is wrought to such a pitch of excitability that the mind, no longer able to bear the strain, gives way and delirium ensues, may, by the uninitiated, be pronounced hydrophobic.

I fully believe such cases do occur; and in the instance of a member of my own profession, and another death more recently after the same dog's bite, I think a fatal termination resulted *alone* from the above cause. I make this statement with all due deference to those who recorded it otherwise.

When a child dies with unmistakable symptoms of Hydrophobia—a child not knowing the nature of the disease, and too young to realise it—then we may not doubt it. But where have we recorded authentic cases of incubation in children so long as three or four years?

One great error is generally made when a dog has bitten a person, viz., in

ordering the animal's immediate destruction, instead of keeping him in safe confinement until the usual or full period of incubation has passed. If the animal then remained in health, all mental anxiety would be removed from a reasonable person's mind ; instead of which, owing to an arbitrary magistrate, the sufferer has continually the unpleasant thought present—Was the dog mad when he bit me ? And I need scarcely say this uncertainty must have a very baneful influence, particularly on an imaginative person. Often have I pleaded in court for the life of a dog on these grounds, but never, I regret to say, with success. Sometimes the application for destruction is made from the superstitious idea that, however healthy the animal may be at the time of the bite, if it ultimately goes mad the bitten person will do likewise. This I think I need hardly tell you is an utter fallacy.

Whether, however, guilty of a bite or not, many unfortunate animals are condemned as rabid through the ignorance of inexperienced persons. The cry of "Mad Dog !" nowadays is quite sufficient to cause an excited mob to hunt down a poor, harmless creature who has perchance lost his master, and in fear and excitement frantically seeks him up one thoroughfare and down another, resenting *naturally* any attempt at capture by a stranger. Panting and distressed he at last falls exhausted, or he is compelled to rest ; truncheons, bludgeons, brooms, etc., or a revolver, are brought to bear on the luckless animal, and often brutal is the torture inflicted before the *supposed mad dog* is put out of danger.

Mr. Scoborio, Manager of the Dogs' Home, observes :—

"Since the establishment of the Home for Lost and Starving Dogs 200,000 animals have been brought to the kennels. I am in a position to state that not one of those dogs has been affected with Rabies, although most of them were stray, starving, or vagabond animals. I think this disposes of the popular theory that the terrible disease alluded to is cherished only by stray dogs. It is important to note this point, because it proves that the cry of death to dogs found in the streets without owners is unjust and unreasonable.

"It is nevertheless true that many hundreds of 'mad dogs,' so called, have been brought to the Home, where they have been isolated, kindly treated, and fed with appropriate food. In not one instance has Rabies been discovered in such animals. Some of the cases at the time of their arrival were represented as 'raving madness,' and stories were told of bites by the dogs which had already resulted in Hydrophobia, yet without the slightest foundation in reason. There were found symptoms of disease but not of Rabies, while proofs of alleged Hydrophobia consisted of the usual vague assertions, without verifications of any kind, so far as could be ascertained.

"This circumstance has an important bearing on the prevailing panic. Ignorance of the real symptoms of Rabies, and terror of its consequences, will inevitably lead to atrocities in our streets. A fit is not a symptom of Rabies, as is popularly supposed ; and no alarm ought to be felt by the public when they see a convulsed dog in the street. Unfortunately, people do not stop to reason, but give way to their fears when they see such an occurrence, and the poor brute is consequently driven up one street and down another at his utmost speed, kicked, stoned, terrorized, and maddened into fury until he bites someone obstructing or pursuing him, whereupon, without further evidence, he is pronounced to be mad. Scenes like these occur in London perhaps hourly during the present panic. A few days ago as a police-officer was bringing a half-bred, homeless pug to Battersea, the animal had a fit in a street adjacent to the Home. The officer was evidently alarmed, a crowd collected, and a cry was set up, 'Kill him, he is mad !' 'Knock his brains out!' 'If he bites you, you are a dead man,' &c. Fortunately, the dog was taken up by one of the keepers, whose experience enabled him to make a

correct diagnosis of his complaint, brought by him into the Home, where medicine was administered, and kindness bestowed on the patient. It soon recovered, and at this moment it is romping with two kittens before my office fire.

"There is still one other fact worthy of mention, which ought to reduce, if not remove, the fears of nervous persons at the present time. Since the enactment of the Traffic Regulation Act (30 & 31 Vict., c. 134), upwards of 95,000 dogs have been seized in the streets by the police, many of which were more or less intractable. These animals were conveyed by hand to the police stations, and afterwards to the Dog's Home, and I am authorized by Chief Inspector Harris, of Scotland-yard, to state that, notwithstanding the great risk of Hydrophobia incurred by the officers engaged and the frequency of severe bites, that dreadful malady, Hydrophobia, has never occurred in the Metropolitan Police, as shown by the medical returns. Furthermore, at the Home for Lost Dogs, where a stream of 1,500 dogs per month passes through the premises, and where upwards of 400 dogs are constantly kept in kennels, bites, sometimes of a serious nature, are of daily occurrence; yet not once during the last seventeen years has Hydrophobia resulted from any of such injuries. The head keeper, Mr. Pavitt, has been employed at the Home from its foundation, and informs me that he has been bitten more or less severely hundreds of times without ever feeling any symptom of madness or any pain except natural suffering arising from the injury."

(*To be continued.*)

CENTRAL VETERINARY MEDICAL SOCIETY.

AT a meeting of the above Society, held on Thursday, November 7th, at Red Lion Square, the PRESIDENT introduced for discussion his experience of a prevailing equine skin disease, hoping for some elucidation of the true pathology of the malady from the other Fellows, whose range of experience of it was more extensive than his own. It assumed an epizootic form, affecting animals of from three to six years old, and differed from other skin affections by reason of the absence of pruritis, though there was local sensibility and soreness. The hypodermic condition being followed by papulation and superficial suppurative action, the papules were discrete; locality, oftener the withers and back; in size ranging from that of a pea to a hazel nut, being circumscribed and indurated. Once developed, there was a succession of papules and quick generation of pus continuing from three to fourteen days. The pus, epidermis, and plastic exudate ultimately dried into a thick brown scab, which, if prematurely removed, revealed ulceration; if not disturbed, left a slight cicatrix. Some cases remained for months. In referring to two recent cases, the one a five-year-old horse on whose skin an eruption developed itself, had his rug removed to a five-year-old cob, which in a few days became severely affected, lasting several weeks. From this it appeared to be a contagious disease; but lest too hasty a conclusion should be drawn from this, he might say that the day before using this rug the cob had been fed on Indian corn, to which at the present time he was inclined to attribute the malady rather than from applying the rug. Purulent matter and other disease products would, it was well known, excite an eruption on healthy skin. He had determined in his own mind that it was an Ecthyma; the exact cause he had yet to learn. Other animals were more or less liable to Ecthyma. He had lately seen that disease in some sheep, where the lesions were identical with the malady described. Anything conducing to debility and systemic derangement might be the cause. As exciting causes expe-

rience pointed to mechanical and chemical irritants and the irritation of parasites. In conclusion, he hoped to excite all the interest the subject deserved at the hands of the Fellows.

Mr. FLEMING said he came also to learn something respecting the malady, for although his regiment was stationed at the Regent's Park Barracks—one of the most unhealthy situations, perhaps, in London—not a case had occurred there. The only case he had seen was that of a charger, a recent purchase from a dealer. From a brother officer at Bath he learned that the disease was a perfect nuisance there, and that the majority of the horses were affected. The dealers he had conversed with held it was contagious, and the President's case rather supported that view. Also that unclipped horses suffered less than clipped ones. Did it equally affect saddle and harness horses? The dealers, who suffer most, did not appear to have had cases until they received foreign horses. That maize was the cause he could scarcely believe.

The SECRETARY said his neighbourhood was near Mr. Fleming's, and he had not met with or heard of a single case, and was even unaware of any epizootic till the President mentioned it. Speaking to Mr. F. Mavor that morning of it, he said, "If you mean the 'Boil disease,' my children have had it as well as the horses." Mr. Daniel also told him he had had about 200 cases, including some 20 in his own yard. They were chiefly American horses employed in tramway work. He had also examined the skin particularly for parasites, but with negative results; that in the process of recovery the particular hairs stood upright, and with the least pull were detached, leaving a vesicle.

Mr. BURRELL, on reading the summons notice of the Meeting, was in some doubt as to the particular disease referred to, as in his experience there were two skin affections prevailing. One he would call "Eczema;" the other, above described, and which was also called "Canadian boils," was possibly due to a vegetable parasite allied to that of "ringworm." He considered it contagious, and markedly so, as in an instance where a diseased horse was put in a stable wherein the clothing was used promiscuously, and the affection went fairly through that stable. Had noticed it in saddle and harness horses equally, as well as among clipped and unclipped. He treated these so-called boils with tincture of iodine or sulphate of zinc.

Mr. LAURENCE HAMILTON, M.R.C.S., asked if inoculation had been practised, and, if so, with what result? as that would settle the question as to contagiousness. As regards parasites and the search for them, he knew that in diseases of the human system, unless looked for in the early stages, they were most difficult to find—the affection of "itch," for instance—so that the search should not be abandoned because one man failed to find parasites. He thought nothing was more likely than a dirty rug to convey the malady.

Mr. FLEMING asked if the temperature was taken, or if the appetite was disturbed; and also if the living skin was examined. The latter was easily done by clipping out small morsels—an almost painless operation—and quickly preparing them. He doubted the presence of parasites, because of the absence of irritation. He recommended inoculation and other experimental tests to decide whether the disease was transmissible.

Mr. WOODGER, JUN., had but two cases, and they were American horses. He doubted maize food as a cause, or having any connection with it, for among some two thousand omnibus horses fed on it no cases had arisen. The two horses referred to were clipped, and the appearances were the same as in the President's description.

Mr. A. BROAD was particularly struck with the circular appearance of the sore after the scab fell off. The disease yielded to simple treatment, and the

constitution was undisturbed. One case was attended with circular patches over the sheath, and much discharge; a scab appearing in the heel was accompanied by severe pain. Treated with sulphate of calcium and simple local wash it soon recovered.

Mr. KING SHAW had had many cases, principally among tram-horses, nearly all Americans. The scab was like "ringworm." One horse was nearly hairless.

The PRESIDENT had been at some pains to ascertain if it was parasitic, and was careful not to express his opinion either way; he was still testing it, and he would abandon the maize theory. The term Mr. Burrell had given it was inappropriate, a "boil" being a different thing, for save in special cases the deeper skin structures were not affected, and there was no sloughing. Only in one instance had he witnessed constitutional disturbance.

The discussion was then adjourned to the next meeting. Present, sixteen Fellows, three visitors. JAMES ROWE, *Hon. Sec.*

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council meeting held on December 11th, the Hon. W. EGERTON, M.P. (Chairman), reported that four competitors had entered for the Society's veterinary prizes and medals. Dr. William Smith Greenfield had been appointed Professor Superintendent of the Brown Institution. Subject to the approval of the Governors of the Royal Veterinary College, the Committee were desirous of obtaining the services of the Inspector of the College for the members on the usual terms, any special report required, or investigation of outbreak of disease, to be paid for like any other special report. The Committee recommend that the grant of £250 be made to carry out experiments on the nature and mode of propagation of anthracoid diseases, under Dr. Burdon Sanderson. The Committee further recommended that the Secretary be instructed to ascertain from the General Steam Navigation Company whether, and on what terms, they would place at the disposal of the Society a quarantine station for the reception of foreign animals entered for exhibition next year; and also the terms on which the Company would provide special steamers for their conveyance. The Committee had met six times, and made six reports; and they recommended that the following be the Committee for the ensuing year:—Earl Cathcart, General Viscount Bridport, Sir. M. White Ridley, Bart., the Hon. W. Egerton, Sir Brandreth Gibbs, Professor Brown, Mr. Chandos-Pole-Gell, Mr. W. Duguid, Dr. Wm. Smith Greenfield, Mr. M. J. Harpley, Colonel Kingscote, Mr. James Odams, Mr. G. H. Sanday, Mr. J. Burdon Sanderson, Professor Simonds, Mr. W. H. Wakefield, Mr. Wm. Wells, Mr. Jacob Wilson.

The Hon. W. EGERTON added that it would be observed that the last paragraph but one alluded to the new orders which had just been issued, and in consequence of which it would be necessary to provide quarantine ground for animals coming from certain countries. In all probability (cattle plague having broken out in Germany) Holland and Belgium would be unable to send animals to the forthcoming exhibition; but, assuming French cattle to be in a healthy state, of course, it was desirable that quarantine should be provided, and that proper regulations should be made. He did not think the Council could ask for a relaxation of any restrictions that might be deemed necessary. This report was adopted.

The DUKE OF RICHMOND AND GORDON, K.G., said, in the first place he must apologise to the Council for not appearing to assist more in carrying on the business of a Society in which he took the deepest and most lively interest—an interest which he had inherited, and which he hoped to pass on

to those who came after him. He appeared before the Council of the Society now, partly as a member of that Council, partly as an agriculturist, but more particularly, probably, as Lord President of the Council; and he must say that when he received a copy of the proposed prize-list, he was struck with the inconsistency of his colleagues on the Council and in the Shorthorn Society, in issuing a prize sheet in which was included a list of prizes for a number of animals that were invited to come from foreign countries. Without wishing to say anything personal to his colleagues, he thought they would all bear him out when he said that since he had had the honour of being Lord President of the Council, they had continually requested him to legislate for the prohibition of the importation of foreign animals. The views entertained by the Royal Agricultural Society and by the Shorthorn Society were these :—That to get rid of those diseases which, as they stated—and he thought perfectly rightly and justly—had affected so prejudicially their interests in this country, it would be necessary to pass a law enacting that all foreign animals should be slaughtered upon the other side of the water. (Hear, hear.) Of course it became his duty to look into the matter very closely, and he found it was impracticable to carry out those views; and he therefore endeavoured to find a mode of solving this difficulty, and accordingly he brought in what he thought a good measure, but which at the same time was a very stringent one. It dealt with foreign animals in a very active manner. That measure, however, did not pass through both Houses of Parliament; it did eventually in a modified form, but still in a form which he believed would be extremely advantageous in the way of keeping down disease, and preventing it from appearing in this country. (Hear, hear.) He was perfectly aware that in consequence of the great kindness and hospitality which was shown in Paris to all their friends during the past year, it had been thought advisable to make some return to the foreigner for what he had done to us. (Hear, hear.) If that could be done with safety he would be the first to agree to it; but he did not think that in doing so they would run any risk of disease being introduced into England, by admitting foreign animals with all the diseases which they could bring with them. That there was great danger in coming into contact with these animals, those who took any active part in the exhibition at Paris would, he was sure, be ready to admit. English animals went there free from disease, and came back with foot-and-mouth disease, so much so that he had to establish a quarantine station near London, to receive them on their return; and he was afraid that he had incurred the displeasure of some of his agricultural friends in the far north in consequence of their long detention in quarantine. There were certain countries from which no *animal* of any sort or kind could come at the present moment—viz., Russia, Austria, Italy, Greece, Turkey, and the Principalities. Then, again, no *cattle* could come from Belgium or Germany; and when the Contagious Diseases (Animals) Act, 1878, came into operation, inasmuch as there was an outbreak of disease in Germany at the present moment, it was almost certain that on the 1st of January, Germany and Belgium would continue to be prohibited countries. Other foreign animals were slaughtered at the port of landing from all countries except Norway, Sweden, Denmark, Spain, and Portugal, and from America and Canada. The Act provided that animals coming from countries subject to slaughter might be sent for exhibition subject to quarantine regulations made under an Order in Council. The Order in Council provided that the landing, at a port, of foreign animals is subject to the following regulations: The animals must be accompanied by a declaration of owners, assignees, or agents, to the effect that the animals are intended for exhibition, acclimatisation or domestication; secondly, the animals when landed are to be detained in the quarantine station for a certain period (which may be seven, ten, or fourteeen days, or any longer period, according to

circumstances); and, thirdly, when moved they are to be accompanied by a certificate of an inspector of the Privy Council that they are free from disease. These were the regulations issued under the Foreign Animals Order, and made under the provisions of the Contagious Diseases (Animals) Act of this year; so that from a country like France, for example, they would be able to send animals for exhibition under these condititions, subject to such quarantine regulations as might be issued by the Privy Council; and he thought the foreign exhibitors ought to know the exact regulations not only that had been made, but which might be made. It was quite obvious that the regulations which he might make would depend upon the state of matters at the time, but he thought it should also be shown to the foreigner that a country which was called a non-prohibited country to-day might be a prohibited country to-morrow; and if a foreigner got up his animals with the intention of exhibiting in London next year, it might be necessary between this time and next June to declare his country a prohibited country; therefore the foreign agriculturist ought to know the exact condition in which he might find himself. Before consenting to admit foreign animals, very stringent regulations would be imposed by the Privy Council. Of course the Royal Agricultural Society would know that when he passed orders for quarantine they would be solid and *bona fide*, and that he was bound to carry out, under the Contagious Diseases (Animals) Act, and by these Orders in Council, a real and *bona fide* quarantine. What he intended to do was to have such a quarantine as should, if possible, prevent us getting any foot-and-mouth disease into the show-yard at Kilburn. By some means or other, whether by the regulations which have been in operation, or by the more thorough inspection of trucks and railway stations, there has not been for some years so little foot-and-mouth disease in the country as there is at present; and therefore he should be extremely sorry if, by a too lavish hospitality to foreigners, we should bring over those diseases which foreign cattle were somewhat prone to. He would beg and urge upon the Council that before the prize-sheet was issued to the foreigner there should be a clear notice as to what he would undertake by entering his animals to be shown at Kilburn; and that it was quite possible that, though he might enter his animals within the time specified, circumstances might arise before the Exhibition took place which would entirely prevent his animals from coming to this side of the water. He understood that the Society were going to provide a quarantine station, but he apprehended that would be done under the Orders in Council, and that some quarantine station might be provided nearer to London than Southampton. In any Orders in Council issued in accordance with the Act he should only make such regulations as he deemed necessary to prevent the introduction of diseases into the country.

Mr. JACOB WILSON was sure that the very best thanks of the Council were due to the noble duke for attending the Council to give so complete a statement of his views; but his Grace would doubtless admit that he had painted his picture in the darkest possible colours. With regard to the proposal to hold an international show, Mr. Wilson reminded the Council that on the occasion of the Society's last exhibition in London, when the late Prince Consort was President, it was international, and it was therefore considered desirable to make the coming exhibition international, especially as they had had the honour of having the Prince of Wales as President. He did not think that English agriculturists had anything to fear from foreign competition, but he thought that both Englishmen and foreigners might learn a great deal from an International Agricultural Exhibition. The whole question was, no doubt, of greater value to the consumer than to the producer of meat, and it was this view which induced the Mansion House Committee to

offer the very handsome prizes for foreign stock and produce shown in the prize list, and otherwise to make the character of the show international. During the whole of the time when the subject was receiving the anxious consideration of the Stock Prizes Committee, it was understood that precautions of a very stringent character would have to be taken, and foreign Agricultural Societies had already been warned of the fact. He could not sit down without alluding to the charge of inconsistency brought against the Council of the Society, because the importation of specially selected animals for exhibition had always been contemplated by the Government; and when the Council asked his Grace and the Government to bring in some measure to prevent diseases being introduced into the country, it had in its eye the scum of foreign animals which were imported in the ordinary course of trade from week to week, in vessels reeking with disease, and not animals specially selected for exhibition, in specially-chartered steamers. He begged to move the following resolution:—"That the Privy Council be respectfully requested to inform the Society, as far as possible, under what conditions and regulations foreign animals from different countries will be allowed to be exhibited in the Society's show-yard next year, in the event of the countries from which the animals are sent being declared free from disease at the time when the animals are exported."

The Hon. W. EGERTON thonght the Council should be satisfied with his Grace's explanation, and the only thing they could do was to furnish the foreigner with particulars of all the regulations which might be enacted.

Colonel KINGSCOTE seconded Mr. Wilson's proposition. The offer of prizes for foreign animals had not emanated from the Society, but from the Mansion House committee, whose views the Council had endeavoured to carry out. The one object they had in view had been to bring over foreign animals under such regulations as happened to be in force at the time, whatever they might be. The proposition of Mr. Wilson would be very useful, because the information it sought for would enable the Society to publish to the countries abroad exactly what they would have to expect if disease broke out in May or June.

After a conversation, in which Mr. Randell, Mr. Dent, Mr. Pain, Earl Cathcart, and the Duke of Richmond took part, the Committee's report, with the addition of Mr. Wilson's motion, was unanimously adopted; and, on the motion of the Hon. W. Egerton, the renewal of the veterinary grant of £250 for the year 1879, for general purposes and for special scientific inquiries, was also agreed to.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held on Wednesday, the 4th December, in the London Hotel, Edinburgh. Professor Baird, of the Dick Veterinary College, presided, and there was a fair attendance of members. The following gentlemen were elected office-bearers for the ensuing year:—President, Mr. R. Rutherford, Edinburgh; Vice-Presidents, Mr. Aitken, Edinburgh; Mr. Balfour, Kirkcaldy; and Mr. Mitchell, Bathgate; Secretary and Treasurer, Mr. John McFadyean, of the Dick Veterinary College, re-elected.

The SECRETARY reported that in accordance with the resolution passed at the previous meeting, he had issued circulars to the members of the profession in Scotland, soliciting subscriptions towards the Fleming Testimonial Fund. He regretted to state that the appeal had not met with so liberal a response as might have been expected. The subscriptions which he had re-

ceived were as follows :—Professor Walley, £1 1s. ; Professor Baird, £1 1s.; Mr. J. R. U. Dewar Midmar, Aberdeenshire, £1 1s. ; Mr. Mitchell, Stranraer, £1 1s. ; Mr. Archibald Baird, Edinburgh, £1 1s. ; Mr. John McFadyean, £1 1s. The Secretary was instructed to remit the amount to the treasurer of the Fleming Testimonial Fund, London.

A motion was carried to the effect that copies of the rules and regulations of "The National Veterinary Benevolent and Mutual Defence Society" be obtained and circulated among the members of the Association.

The SECRETARY gave notice that at the next meeting he would move the following resolution :—"That this Association take steps to further the return to the Council of Members of the Royal College of Veterinary Surgeons of Members to represent the Scottish section of the profession."

Mr. RUTHERFORD related the history of a case of open hock joint in a mare which had been successfully treated by means of shellac dressing. He also drew attention to a case of so-called Azoturia, in which he attributed very successful results to the administration of chloroform to prevent struggling and allay the severe muscular spasms.

Professor WALLEY expressed an opinion that the word "Azoturia" was a misnomer, and did not indicate the true pathology of the affection, the symptoms of which, he contended, were purely those of acute Uræmia. He thought it an important part of the treatment to promptly evacuate the bladder and inject a dilute alkaline solution. This had by his recommendation been done in the case alluded to by Mr. Rutherford.

Mr. ROBERTSON, Kelso, stated that in his experience the disease usually had a fatal termination if paralysis set in before the animal could be got to the stable or medical aid summoned, and that the administration of cathartics had been attended with the greatest success. He thought that further investigation into the pathology of the disease was desirable. It was generally stated that there was no albumin present in the urine, but in several analyses made for him by Professor Dewar, albumin was found in considerable quantity.

Professor WALLEY exhibited a fibrous tumour weighing 36 lbs., which had been removed from the abdominal cavity of a sheep. It was of an enormous size, and on section it was found to have undergone a considerable amount of softening in its central portion.

Mr. ROBERTSON, in continuation of the paper on "Arthritic or Joint Disease in Young Stock," read by him at the previous meeting, proceeded as follows :—

In any attempt to arrive at a correct estimate of those causes which are the chief factors in the induction of this morbid condition, it is certainly more advisable to take a large or liberal view of the subject than to confine our attention to a few isolated cases of its manifestation ; to those, in fact, which admit of explanation probably by considering the action of more than one adverse condition. No doubt cases exhibiting in most of their features the characteristic symptoms and changes of this too well-known and fatal malady are often, or it may be regularly, met with every season and amongst all herds, and may be capable of explanation by reference to some peculiar idiosyncrasy or constitutional defect of individual animals, operated on by very diverse extrinsic influences. This, however, is not the condition we are called upon to consider. When large numbers of animals, possessing very varied individual constitutional peculiarities, and subject to much variations as to external influence, become the subjects of special organic changes, the causes of this morbid action, we apprehend, must be looked for in some special and largely operating adverse influence.

In the remarks which I formerly made regarding the pathology of this disease, you may recollect that I directed your attention to several received opinions as to the nature of the malady—opinions entertained by those who,

considering their knowledge and opportunities, may be regarded as best able to form an opinion thereon. First, we noticed that view which regards this arthritic disease as essentially rheumatic in its nature. Second, that which regards all the structural changes, &c., as resulting from, or but the natural sequelæ—under certain conditions—of, a scrofulous diathesis. Thirdly, the one in which it is looked upon as simply metastatic Pyæmia, the result of prevalent Omphalo-phlebitis and umbilical Thrombosis. Fourthly, that estimate of it which gives it rather the character of a developmental disease evidencing a want of formative power in tissue production and elaboration, and intimately connected with a faulty regimen of one or both parents. The two latter views of the nature of enzootic Arthritis of young stock are those which at the present time probably receive the greatest amount of support, and it is to these, the pyæmic and the dietetic, that I would more particularly request you to look at this time, not because I regard the rheumatic or scrofulous as undeserving of attention, but rather because of our limited time, and the greater probability or present belief, that in one or other of these views we will find the true cause of this malady.

As I have already said, there is no doubt of the existence of metastatic Pyæmia in the great majority of the cases of this arthritic disease, and particularly so in all outbreaks of an enzootic type. It is also equally certain that accompanying, or it may be preceding, the general and local arthritic symptoms, we very frequently find inflammation of the veins and other structures of the umbilical cord, and occasionally also, thrombosis of the umbilical and other veins. That the origin of this morbid condition of the structures of the umbilical cord, and those other changes in the general vascular system, may in certain instances owe their existence and have as a starting point the inoculation with septic matter through the medium of an open umbilicus, we are free to admit; but that in every case this inoculation is the cause and origin of the disseminated abscesses, and the state of general Pyæmia, I must be allowed to say that to my mind there is not as yet sufficient evidence to place this conclusion beyond doubt. If to inoculation alone we are to look for the origin of omphalo thrombro'phlebitis, diffuse abscesses, and general suppurative action, how are we to account for, and to what cause are we to look for a similar condition in the fœtus during intra-uterine life?

Again, many cases may be observed where both the constitutional and local symptoms of the disease are well marked, and where the structural lesions peculiar to every well-marked outbreak are present, including the usual tissue changes within and around the articulations, multiple abscesses in the liver and spleen, hyperplasia of lymphatic glands, thrombosis of large and small veins, alterations in serous membranes, &c., with an absence of any well-marked change in the umbilical cord. If a inoculation from without by septic material through medium of the umbilicus, resulting in purulent Omphalo-thrombo-phlebitis, diffuse abscesses, and a state of general Pyæmia, is to be regarded as the only source, and is indicative of the true nature of this enzootic Arthritis of young stock, we should hardly expect that its appearance amongst these young animals would be so frequently accompanied by so many marked and serious conditions of ill-health in the breeding animals, their dams, as it really is. Although the evidence in support of the pyæmic origin, starting from inoculation of this arthritic disease, is powerful and well assorted, and although it is at the present time well handled and supported by some of the ablest scientific veterinarians, I must say that at the present time I am not so satisfied that we are perfectly correct in assigning to it this and no other origin, or even in placing this external septic influence in its power of operation above every other, as I was in 1863, when my attention was first particularly directed to it. It seems rather that the weight of evidence is pointing in the direction of diet as the source to which

we ought to look for the chief cause of the disease. That we ought to regard it as a disease of mal-nutrition, having its origin during intra-uterine life, closely associated with or dependant on an unhealthy condition of one or both parents, this state of ill-health, again, being the result of a faulty dietary.

There are several lines of argument in support of this view, which might profitably be considered. I will, however, at this time merely direct you to give some little attention to two of these. 1st. The fact that in all well-marked enzootic outbreaks of this disease amongst sheep, the ewes are rarely if ever in a state of well-established or robust health ; very often they are sufferers to a great extent from serious systemic disorders. 2nd. That this particular arthritic disease can be produced at will in lambs by a particular dietary of the ewes. Anything strikingly abnormal in connection with the ewes where arthritic disease has occurred amongst the lambs, may not appear until after parturition ; but immediately succeeding the accomplishment of this act, and coincidently with the appearance of disease in the progeny, it is an exceedingly common thing to meet with serious and extensively distributed disease in the former. Malignant parturient fever has been noted by some observers ; in my own experience the morbid conditions have been chiefly associated with the assimilatory system, anæmia with structural alteration of the liver ¡being the most common and extensively distributed. Neither this diseased condition, nor these structural alterations, can be regarded as purely post-parturient changes. Attention once directed to the subject by the ocurrence of a few cases, a very cursory examination of the entire flock, will generally satisfy any one only moderately skilled in the management of these animals, that their condition is the reverse of satisfactory. The diseased condition only culminates with the act of parturition as a rule, although there are many that succumb to the systemic weakness during the latter weeks of gestation.

From observations and the notes which I have kept of certain flocks, I feel satisfied that the general debility from anæmia, and the structural changes in the liver, originate at a period long antecedent to parturition. That breeding and pregnant animals, so decidedly anæmiated and exhibiting so marked hepatic disease, should give birth to weak and structurally defective progeny, is not to be wondered at. That lambs born of ewes so circumstanced should become the subjects of enzootic Arthritis, in which a marked feature is the existence of badly developed and ill elaborated tissue, the elements of which are prone to retrogressive and degenerative changes, seems only the natural result of the law "that like produces like." It is rathe interesting, too, to note that many changes and abnormal conditions observer in the vascular system of the lambs suffering from arthritic disease seem but the counterpart of those we meet with in their dams. Bollinger and those who hold with him lay great stress on general and particular thrombosis as a diagnostic feature of this disease in all young animals ; now it is not uncommon to find in those ewes which have sunk anæmiated either before or after parturition, thrombosis of some of the larger veins, as the iliacs and cavæ. This condition may be either partial or complete, while that the masses of fibrin plugging the vessels are not *post-mortem* results seems most probable, both from the character of the coagula themselves and the condition of the walls of the blood tubes. It is not meant to be asserted that in every outbreak of this malignant joint disease in lambs, the ewes will invariably be found sufferers from anæmia and organic disease of the liver ; still, I have no hesitation in saying, that in every well-marked inroad of any particular flock, the general health and constitutional vigour of the ewes is below par. The particular form in which this want of vigour shows itself may vary. I have most frequently seen it deve-

loping in some disturbed or diseased condition of the assimilatory systems. In support of the assertion which I have made, that arthritic disease in lambs may be produced at will by a particular dietary of the breeding ewes, I will endeavour shortly to give you the account of the treatment, during a few seasons, of a rather large flock of high-bred Border Leicesters, together with a simple statement of the diseases occurring at parturition, and an idea of the death-rate in both ewes and lambs. I may also tell you that any deviations from the ordinary treatment of breeding ewes were undertaken with a view to the prevention of disease in both ewes and lambs. The lands on which these sheep were kept were in high condition, manurially rich ; no grasses were grown on the lands but Italian rye-grass and clovers. From the state of cultivation, the grass on which the ewes were pastured during winter was invariably rough, rank, and full of growth ; on these pastures they were chiefly kept. During spring they might have some turnips on the breaks, and at lambing the roots were laid down to them on grass. All ewes which had been on these lands for two or three years were sufferers from hepatic disease, in the older animals complicated with ascites. Every year, that is every year until the modifications of diet to be presently mentioned were attempted, there was at parturition a very serious loss of both ewes and lambs. The causes of death in the latter were—1st. This arthritic disease we have been considering in conjunction with purulent omphalitis ; 2nd. Congestive fever, with occasionally local blood extravasations. In the former it was almost invariably anæmia, with structural disease of the liver and an occasional outbreak of parturient fever.

After long observation, much inquiry, and thought, I felt satisfied that the chief cause of the excessive fatality amongst the lambs was mainly to be attributed to the condition of the ewes, and that this again was largely influenced by their dietary during gestation. Acting upon this conviction, means were taken in late autumn to have the pastures on which the ewes were chiefly to be kept during the winter 'run up,' *i.e.*, to have the grass well eaten down ; on this the ewes were placed in rather large numbers, so that the plants would have little chance of attaining to any luxuriance while they remained there. On this grass, however, the ewes were dependant only to a very moderate extent for their support. This was supplied to them chiefly by a mixture of hay and oat straw cut together, and, as circumstances seemed to indicate, a proportion of some cake and other artificial food. As parturition approached a moderate supply of turnips was allowed, which was continued for some time when with their lambs in young grass. When these conditions were followed out with anything like faithfulness, the state of matters at parturition was very much more satisfactory than under the usual routine. The number of cases of arthritic disease was reduced to a minimum, while the death-rate of the ewes could be looked upon without positive alarm. Once when the lambing season had been got through with remarkably little loss amongst both ewes and lambs, a return was made next winter to the usual full feeding on winter-grown grasses with no artificial food. This was succeeded by a spring showing an unprecedentedly high death-rate amongst both lambs and ewes. The causes of this loss were the same they had ever been when the same treatment had been pursued. It is not, however, entirely through medium of the breeding and pregnant animal that faulty dietary seems to operate in the production of defective and ill-elaborated tissue formation in the young. There seems good reasons for believing that a like train of influences are imparted to our male stock animals by want of a correct appreciation of the dietetic conditions necessary for the development and maintenance of perfectly healthy animal existence.

There can be little doubt that the best of our male stock animals, particularly those of the varieties in the several classes which by general consent

are regarded as the most highly developed and improved, are in much pertaining to their constitutional vigour and powers of procreation not a little impaired by the system of dietary to which they are subjected. It is not to the developing or perfecting of the best qualities of these several animals, or of the particular species, that attention is as a rule chiefly directed, but rather to the production of simply fat animals. We are well aware that fat tends to obscure much that may be wanting in external conformation in exhibitions and show-yards.

At this point Mr. Robertson had, through lack of time, to bring his paper to a close. In response to a desire which was generally expressed, he consented to continue his remarks at a future meeting and the discussion on the subject was therefore till such a time adjourned. J. McFADYEAN, *Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held at the Medical Institute, Hope Street, on Friday, November 15th, 1878. William Whittle, Esq., President, in the chair.

There were present—Messrs. Reynolds, Morgan, Elam, Moore, Watson, Stevenson, Townson, Lloyd, and Chisnall, of Liverpool; John Gerrard, Market Deeping; T. Greaves, P. Taylor, W. A. Taylor, S. Locke, E. Faulkner, and A. Prescott, of Manchester; W. Dacre, Altrincham; W. Woods, Wigan; J. H. Welsby, West Derby; Jas. Moore, senr., London; W. H. Roughsedge and J. S. Menzies, St. Helens; H. Barnes, Malpas; Jas. Storrar, Chester; P. E. Rothwell, Woolton; Lewis, Tarparley; and the Secretary.

Letters of apology were received from Professors McCall and Axe; Messrs. H. J. Cartwright, T. Hopkins, T. Taylor, G. Heyes, E. Nuttall, W. A. Cartwright, T. Roberts, W. G. Schofield, M. J. Harpley, A. H. Santy, L. Butters, J. B. Wolstenholme, G. Carless, W. Lewis, and J. Lawson.

The minutes of the previous meeting were read and confirmed. Messrs. Stevenson and Chisnall, of Liverpool, and Lewis, of Tarporley, were unanimously elected members of the Association.

The Committee of the Fleming Testimonial Fund gave in their report, and after considerable discussion the Committee were instructed to confer with the Committee appointed by the Lancashire Association, in order to determine what further action should be taken regarding it.

Mr. GERRARD then read a paper entitled "Remarks, Anatomical, Physiological, and Pathological, on Parturient Apoplexy," of which the following is a copy:—

Man has somewhere been said to be a gregarious being, that is to say, he loves to assemble in flocks, and it may be that owing to this common infirmity, or rather common instinct of our nature, I am here to-day.

Certain it is that, whatever my motives may be—not being a member of your society, or indeed any other society—I feel that I owe you an apology or explanation for my appearance here.

Well, it is simply this. Some time in the month of last March, in writing a friendly letter to your Secretary, I chanced to make some remarks on the "germ theory of disease in its relation to Splenic Fever," and he, with that instinctive eye to business which I suppose all secretaries of veterinary medical associations possess, suggested that I should write a paper on the subject, and come over and read it at your May meeting.

Pressure of business, no less than the intricate and abstruse nature of the subject, prevented me from complying with his suggestion, and he very generously gave me another three months.

I found, however, that the progress of discovery in relation to this vital controversy was so rapid, the subject itself so extensive and intricate, that I was compelled to give up the attempt, and that the more especially as it had been quite recently brought under your notice by one of the greatest lights on veterinary matters in these regions. For although men have speculated for thousands of years on the mystery of the origin of life, and although modern discovery and speculation have multiplied our means of being able to form a judgment on this subject, we seem still as far as ever from an agreement; and it would seem but the result of a proper modesty on our part to stand aside until these intellectual gladiators and scientific *savans* have definitely discerned and described the movements of ultimate molecules, or the evolution of living protoplasm from non-living matter.

As that arrangement could not be carried out, I began to think I was free; but he, with that persistent determination said to be characteristic of his countrymen, continued to importune me, so that at last I was obliged to yield to his solicitations, and choose a more homely and practical theme.

I find, however, gentlemen, that apart from his importunities, you had a claim upon me—I had read and heard your discussions and partaken of your hospitality, so that I could not consistently refuse to try at least to repay you by undertaking to introduce some subject, if with no other object than to raise a discussion. For I presume that it is one of the main objects of such associations, not so much to instruct, as to exercise the mental powers, by placing a subject before the various minds who compose it, and thus enable them to *focus* the rays of light passing through the different media, so that truth may be attained by argumentative investigation.

But I can assure you, gentlemen, it was only after a great deal of hesitation, and not a little inconvenience on my part, with a persistent determination on his, that I undertook the honourable duty of occupying this place. I am too conscious of my inability to fill this place, usually filled by authors, editors, principals, and professors, or to offer anything fitted to occupy the time, or command the interest of an audience accustomed to be fed on the cream of experience, or the teachings of philosophy.

I have no academic utterances to give forth, no minute microscopical observations to chronicle, but my remarks will be the simple cogitations of a hard-worked country practitioner on an important and by no means unusual pathological condition—a condition with which I presume a good many of you are practically familiar.

And my reasons for selecting this subject for your consideration are—first, because I have lately had an unusual number of cases of this disease; and secondly, having had my attention specially directed thereby to a new theory of the disease propounded by that remarkable man, George Fleming, in his lately published work, "Veterinary Obstetrics"—a man so untiring in his efforts for the good of the profession, and so encyclopædic in his knowledge, as to make one almost wonder if he eats, drinks, and sleeps like other men.

Of the importance or utility of the subject I need not enlarge.

To all those engaged in country practice, and who often have to face the humiliating fact of frequent inability to cure, it is hardly possible to exaggerate the importance of a correct knowledge of the nature of this most interesting and frequently fatal malady.

And even when viewed by the lights of physiology and pathology, its phenomena afford food for reflection and room for speculation to some of the largest minds engaged in the study of medicine; for it is at once one of the most abstruse and intricate conditions in the whole domain of pathological physiology: occurring, as it does, in the bovine female only, and only in certain well-defined conditions in her,—alike interesting for the frequency

and fatality of the attack, no less than the suddenness of termination. And even although by the lights of physiology and pathology we may not be able to combat or cure such a complex condition as it is admitted to be, it behoves us all, as men claiming to belong to a learned profession, to know everything we can regarding it, and be able to render a reasonable and intelligent explanation of its phenomena when called upon so to do. And no explanation can be considered reasonable or intelligent now-a-days, unless it accords with the Frenchman's dictum, "That no scientific theory can be considered complete, until it is so clear that it can be explained to the first man you meet in the street."

Nor is it any reproach to our branch of medical science if we are unable to cope with this fell destroyer in the matter of cure, when we reflect on the many incurable conditions to which the human family is subject, with its more highly-trained medical attendants and investigators.

Think of the loathsome and awfully fatal malady of Parturient Fever in the human female, which seems to laugh and mock at all attempts to stay its deadly ravages.

The few remarks I shall have to make, may doubtless be regarded by many practical-minded men here as too theoretical. Without anticipating your conclusions, however, I may be permitted to say that there is too much prejudice in the present day against the man of theory by the men who glory in the euphemistic phrase of "practical," and who sneer at all advances in pathology. It may be true of some theoretical men that they do not succeed in practice as those who cannot theorise so well; but this only shows that there must be some peculiar idiosyncrasy in their mental or physical constitution, and by no means proves that a man who can take the most comprehensive views of the science of medicine and surgery cannot also carry them into practice.

Indeed, if we examine the writings of the most eminent surgeons and physicians, we shall find that they were eminent men of theory.

Cullen, some hundred years ago, makes some very appropriate remarks on this very subject. He says :—"Every one now-a-days pretends to neglect theory and to stick to observation. But the first is in talk only, for every man has his theory, good or bad, which he occasionally employs; and the only difference is that weak men who have little extent of ability for, or who have had little experience in reasoning, are most liable to be attached to frivolous theories; but the truly judicious practitioners and good observers are such as have the most extensive views of the animal economy, and know best the true account of the present state of theory, and therefore know best where to stop in the application of it."

If, as Herschel says, knowledge saves us from futile and inglorious effort, it widely opens to us ways of success which are closed to ignorance.

With the name "Parturient Apoplexy" we need not cavil, for as it sufficiently indicates its nature in both symptoms and appearances as borne out by Autopsies, we think it as appropriate as any hitherto applied. True, we do not always find a serous and sanguinous effusion on nerve centres; but in fifteen cases out of twenty, if properly examined, we shall discover such appearances as leave no room to doubt of its apoplectic nature, the principal question to settle being the cause of the apoplectic symptoms and appearances.

It may be necessary to state, however, that we exclude from this designation several states of a complicated character occurring at and after parturition: such as, Metritis, Metro-Peritonitis, and the fever arising from such conditions, generally caused by wounds and bruises to the membrane lining the genital passages in the act of parturition.

These run a different course, and present different and well-defined symp-

toms and appearances. We also exclude from this designation the inability to rise or properly use the hind extremities, frequently found after parturition, known as *Adynamia nervosa generalis*, and arising from weakness or want of tone in the system, when debilitated from bad or insufficient food and after having given birth to twins, and rarely associated with fever or any brain symptoms, and generally amenable to treatment.

Limiting and defining our subject thus, we will pass on to consider the nature of "Parturient Apoplexy," viewed by the light of recent reasoning and research, and by facts furnished by experience.

The deductive method in medicine is fast giving place to the inductive. Hypothesis must give place to facts, and from facts we must rise to general inferences, if we wish to found pathological laws on a solid and enduring basis.

Before noticing some of the established facts in connection with this disease, it may be as well to pass in review a few of the various theories that have been advanced regarding its etiology.

They are necessarily numerous, but we shall only notice a few of the most prominent, or those that have taken the greatest hold on the public or professional mind.

There is, 1st. The Theory of Debility or Weakness.
2nd. The Septic Theory.
3rd. The Anatomical Theory; and
4th. The Ganglionic Threoy.

First. The theory of debility or weakness.—This is scarcely worthy of being called a theory, or of being brought under your notice. It is so called on account of the most prominent symptom of the disease, the inability to rise or stand, but it does not attempt to fathom the cause of this debility. I should not have brought it to your notice, were it not that it has possession of the minds of a great number of people in the eastern counties, and even some members and a fellow of the R.C.V.S.; and the theory they propound is only equalled in inanity by the treatment they prescribe, viz., to abstain from milking any animal for a day or two after calving, for, say they, "If you milk cows you weaken them, and cause them to drop." I never could meet with any one, either member or fellow, who could give any explanation of how the taking away of formed material in the shape of milk from any animal, especially when the gland is distended, could produce or account for any of the symptoms of this disease.

Such treatment, if extensively carried out, would threaten the extinction of the bovine race; for it is the principal object of the secretion, as destined by nature, to nourish the offspring, and, if this be denied them, as it must be if they carry out their theory, their numbers would assuredly decline, and the survivors sadly deteriorate.

One can scarcely help wondering how such ideas could be seriously entertained, and it is astounding to think that at this time of day there should be a member or fellow of the R.C.V.S. so ignorant of the facts and well-recognised laws of physiology and pathology. Yet so it is.

In connection with this, and in contrast thereto, I may mention the procedure of a practical man. Most of you will have heard of Mr. Fowler, a large importer of Alderney and Guernsey cows, which are regarded by some as very susceptible of this disease. Well, his preventive is to never allow the cows to go "dry," but keep milking them right on to calving; and it is reported that he has never had a case since he adopted this plan.

Secondly. The theory of Septikæmia.—This theory pre-supposes the development within the system of a poisonous principle—bacterial or otherwise—arising from the retained lochial discharges, or the retrograde metamorphosis of uterine tissue.

It is closely connected with the theory of fatty degeneration lately propounded by an American brother, who describes it as an immense development of fatty particles within the muscular fasciculi, so as to diminish the contractile power of the muscles: that after the expulsion of the fœtus the uterine muscles are unable to contract sufficiently, and the retained *débris* goes on to putrefaction. This is suddenly absorbed and develops the disease. It is true that the muscular fibres of the uterus undergo, after parturition, a fatty metamorphosis, in consequence of which they almost all melt down and disappear; so that in the brief space of a week or ten days the whole organ dwindles down and diminishes to nearly its original dimensions.

It is a well-known fact that a mare will conceive again—and as readily as at any time—on the ninth day after parturition; but this is a normal process, purely physiological in its origin, and takes place in all healthy subjects. And it so happens that in cases of this disease—"Parturient Apoplexy"—the uterus seems to be well advanced in this retrograde metamorphosis, so that it is evident we must look somewhere else for a cause. Nor does the theory of the development of a toxic agent within the system find any confirmation in the history, symptoms, or appearances of a typical case of the disease.

I confess that, finding albumin in the urine on several occasions, I was somewhat inclined to a similar view; but recent cases, in which it has been absent, have convinced me that it is by no means a constant factor in the disease; although its constant presence in puerperal convulsions in the human female, and in connection with *para-* and *hemi-plegia* is an acknowledged fact in obstetric pathology.

If the disease were of septic origin, we should find it after difficult and first parturitions, where the traumatic lesions favour the development of *toxæmia*, and where albuminuria is a constant condition.

True, if we have a very fat cow down with this disease, we are less likely to get her up than one in fair or lean condition. But this, I consider, is owing to the want of tone in the system, or the deficiency of disease-resisting power, arising from fatty degeneration of the heart, arteries, and other important organs, which is always present in such subjects. But, indeed, we rarely have a very fat cow down with this disease, unless her milking capabilities are highly developed, and it is a well-known fact that a cow having a tendency to lay on fat has little aptitude for the formation of milk. Our high-bred shorthorn cows very rarely go down with this disease; and in this connection I may state to you the experience of a shorthorn breeder of thirty years' standing. Robert Searson, Esq., late of Cranmore Lodge, Deeping St. James, had a very good herd of shorthorns, and bred successfully for thirty years. During all that time he never had a case of "Parturient Apoplexy," his principal difficulty being the tendency to fatten and give over-breeding manifested in his best cows; and, on the other extreme, a tendency to Tuberculosis, arising from prolonged lactation.

Before he began to breed pure shorthorns he was very much troubled with "drop" after calving, and after he gave over—some seven years ago—he had a return of the old visitor.

These facts, I think, prove pretty conclusively that the fatty degeneration theory "will not"—as a critic remarks—"hold water."

Nor is Professor Lyman more happy in his explanation of his theory, when he states that the symptoms of the disease, in the early stages, "are due to Phlebitis or Thrombosis," and that "the disintegration of the clot and the discharge into the circulating medium of this product" is the true and only source of the disease."

If this were "the true and only theory" of the disease, very few parturient animals would escape, for the involution of the uterus by fatty degeneration is a phenomenon in all. And even although Phlebitis and Thrombosis might

occur in some—for it is by no means proved that it takes place in any of our patients—we have no *phlegmasia dolens* in them—it does not follow that Septikæmia must follow as a consequence; nay, rather we should expect Embolism and its attendant evils.

(To be continued.)

Jurisprudence.

DISPUTED DENTITION.

MURDOCH *v.* SWANN.

This was a case heard at the Leeds County Court on October 4th last, in which the plaintiff was Mr. R. W. Murdoch, veterinary surgeon, Leeds, and who sued Mr. E. W. Swann, iron merchant, Middlesbro', for the sum of £3 4s. 6d., for professional services rendered during January, 1877. There was a counter-claim set up for £50 for negligence, the plaintiff having, as the defendant alleged, wrongly certified the age of a certain horse to be rising five years old when he was only rising four.

Mr. West, barrister, appeared for the plaintiff, and Mr. Ferns, solicitor, for the defendant. Before the case had been opened, His Honour asked the advocates if they did not think it was a case for an assessor, who could bring his knowledge of horses to bear on the case. Mr. Ferns intimated his willingness to accede to that course.

Mr. West said he did not think it was a case for reference, but rather a question of law, and added that both of the assessors to the Court we reengaged in the case.

Mr. Ferns: It will be the same thing to me which ever way it is.

Mr. West: I have got round me to-day professors and veterinary surgeons, and it would be like throwing twelve trumps away, and giving the defendant the chance of playing another game.

All witnesses on both sides were then ordered out of court, and the case was proceeded with.

Mr. West said the plaintiff, who was a veterinary surgeon, and had been practising in Leeds for a number of years, had been instructed by the defendant at various times to examine horses for him. On the 13th, 15th, 16th, and 17th of January, 1877, he rendered professional services. The plaintiff, following out the defendant's instructions, examined a bay gelding on the 18th of January at Messrs. Parsons', horse-dealers, Leeds. The item in the bill for the services rendered on that day was disputed by the defendant, who, the learned counsel understood, had set up a counter-claim. He then called the following evidence:—

ROBERT WALTER MURDOCH, the plaintiff, said, in answer to Mr. West, he was a member of the Royal College of Veterinary Surgeons, and was practising in Butts Court, Leeds, where he had been for a number of years. In consequence of instructions which he had received from the defendant, he had attended Messrs. Heppers' horse repository, Leeds, and Mr. Binns', horse-dealers' stables, in Leeds, for the purpose of examining and trying horses on the different days between the 13th and 17th of January, 1877. On the 18th January he examined a horse at Parsons Bros., horse-dealers' stables in Leeds, for the defendant, and gave a certificate of the result of his examination to the following effect:—"By this I certify that I have this day ex-

amined a bay gelding. I find the said gelding to be rising five years old. Sound with the exception of splints on the inside of both fore-legs, which, in my opinion, will not cause lameness."

Cross-examined by Mr. Ferns: The horse he examined at Parsons' was at the defendant's own request.

Mr. Ferns: Did you examine the horse's mouth?—Yes, or I could not have certified him to be rising five years old.

Are the teeth in a young horse's mouth the general indications of his age?—They are supposed to be.

Had any teeth been taken out of this horse's mouth?—Teeth had been taken out to allow other ones to come up.

Is that a practice among horse-dealers when they want to pass a horse off to be older than what he really is?—Yes.

What teeth are extracted in order to give the mouth this altered appearance?—The milk, lateral, or corner incisors.

Did you notice in this instance whether any of the corner incisors had been extracted?—Yes, I did.

Did you point that out to your employer?—No, it was not necessary.

Seeing that some incisors had been removed, was not that an indication that there was an attempt at fraud on the part of some one?—It must have been. The idea was to make the horse look a little older than he really was. It is what is called a "doctored" mouth.

Well, now, seeing that, why did you not tell Mr. Swann that there had been some "doctoring"?—The permanent corner incisors were in the jaw and protruding about half an inch, which indicated the horse was rising five years old.

Were you paid by Messrs. Parsons?—No; I was not paid. Do you think I do such things?

You did not receive money?—Do you think I was bribed to pass this horse?

Have you been employed by Messrs. Parsons?—I have.

Are you their veterinary surgeon?—No.

In what capacity have you been employed by them?—I have been employed in examining horses, and in treating diseases.

You observed the appearance of the horse's mouth and teeth, and yet you never told your employer?—I told him it was rising five years old.

Will you swear you thought it was rising five years old?—Yes, I will. That was my opinion.

Would you be surprised to hear the horse was only rising four years old?—I might have been mistaken in my judgment.

Did you converse with any one about this horse's mouth?—Not that I know of, or can remember.

Do you remember Mr. Swann writing to you about this matter?—Yes, it was on April 9th, 1877.

The letter was then put in, and read as follows:—"The horse you examined for me at Parsons' I find is only four years old instead of five, and a backward one, too. This being the case, he is of no use to me to do my work."

Witness continuing in his cross-examination, said Mr. Swann came over to Leeds afterwards, and asked him (plaintiff) to go to Middlesbro' to examine the horse again. He went over on the 30th of August, 1878, in company with Messrs. Taylor, Lawson, Cuthbert and Broughton. At that time the horse had a perfect mouth of teeth.

By Mr. West in re-examination, plaintiff said it was a common practice with unscrupulous dealers to extract a horse's teeth in order to make him look older than he really was. The proof of a horse's age by his teeth was not certain; there was not any absolute proof of a horse's age known to

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veterinary surgeons, as to whether he is four or rising five years old, if his teeth had been tampered with. The horse was examined at the same time by his assistant. The way in which a horse had been fed and cared for would have some tendency to alter the form of its mouth.

By Mr. Ferns: The difference between milk and permanent teeth was that the milk teeth were smaller, and had less fangs than the permanent ones.

PROFESSOR WILLIAMS, of the New Veterinary College, Edinburgh, said in answer to Mr. West, he had been in practice for over thirty years. It was sometimes the practice among unscrupulous horse dealers and breeders to remove the milk teeth, so that the permanent teeth came up sooner than if nature was allowed to take her own course. When this trick had been done skilfully, and the permanent teeth had made their appearance, it was quite sufficient to deceive any veterinary surgeon of ordinary skill and knowledge.

Cross-examined by Mr. Ferns: If the corner permanent incisors were growing, but not grown, in January 1877 (when the the examination took place), he should assume the animal was rising five years old. The tush was a canine tooth protruding at the side of the mouth. It generally appeared at about four years old, but he had seen them before that age. If the tush was out it would indicate the animal was rising five. If he found that the tush did not correspond in growth with the permanent corner incisor he should still say the horse was rising five years old.

Mr. PETER TAYLOR, Manchester, said he had been in practice thirty-four years as a veterinary surgeon. It was a common thing among horse-dealers to extract milk teeth in order to allow the permanent teeth to come up into the mouth before their ordinary time. The appearance of a horse's mouth after this operation was done was in his opinion quite sufficient to deceive a veterinary surgeon; in fact he had been deceived by that trick himself. The tushes in his opinion were not much to go by in telling a horse's age, as they could be tampered with. There was only one way by means of which a horse's age could be ascertained, and that in this case had been so tampered with that it was no sure criterion.

Cross-examined by Mr. Ferns: He saw the horse on the 30th of August last; at that time the horse had a full mouth of permanent teeth. If he had been employed by any gentleman to examine a horse, and had noticed irregularities of the teeth, he should have considered it his duty to have acquainted his employer of the fact that the mouth had been tampered with.

MARTIN NAYLOR, Wakefield, who has had from thirty to forty years experience as a veterinary surgeon, deposed that it was a well-known fact that horse's mouths were sometimes "doctored," and that process would deceive a well-qualified veterinary surgeon. He had been deceived himself. He remembered a case in which a horse of his own had a full mouth of permanent teeth at three and a half years old, and appeared to be five.

Mr. JAMES FREEMAN, Hull, who had been in practice thirty-four years' said in answer to Mr. West, the practice was a common one of removing the milk teeth so that the permanent teeth come up sooner than they should. Supposing that this had been done, it would delude any veterinary surgeon.

Mr. JOHN CUTHBERT, Leeds, of thirty years' experience as a veterinary surgeon, said that if the corner milk teeth had been tampered with when the other four permanent ones were in the jaw, it would deceive an ordinary skilful veterinary surgeon in telling the precise age of the animal. He should consider it his duty, however, if on examining a horse he found that the mouth had been "doctored" to call the attention of his employer to the fact.

Mr. JOHN H. FERGUSON, Leeds, corroborated the previous four witnesses' evidence.

Mr. WM. BROUGHTON, Leeds, gave evidence to the fact that it was a common thing to extract the milk teeth in order to allow the permanent ones

to come into the mouth. When this was done it would deceive a veterinary surgeon in examining a horse's age.

Mr. THOS. GREAVES, Manchester, a veterinary surgeon of forty years' experience, said that there was no certain test of the age of a five-year old horse. It was a very uncertain way of ascertaining a horse's age by the tush alone, but that combined with the other teeth was the only method known. He then corroborated the previous witnesses' evidence as to the likelihood of a veterinary surgeon being deceived by a "doctored" mouth.

Mr. LEONARD PARSONS, horse-dealer, Leeds, has been in business for twenty years in partnership with his brother. He remembered the bay gelding he sold to Mr. Swann on January 18th, 1877. He bought him in County Tyrone, Ireland, and when he was sold had had him in his possession only four days. He examined the horse's mouth when he bought him and found that he was rising five years old. The horse had cut his permanent corner teeth at that time. Before the horse was sold he saw the plaintiff examine it. Previous to that both Mr. Swann and his coachman had examined it. After the examination by the plaintiff he (witness) sold the horse to Mr. Swann for £100. He was quite sure that there was not a milk tooth in the horse's mouth on the day he was sold.

Cross-examined by Mr. Ferns: Is it your practice to give coachmen something to pass horses?—I generally give them £1 when their employers purchase a horse from me.

Did you not give Mr. Swann's coachman, £2 10s.?—Certainly not; I gave him £2.

JOHN TUSKING, who has been for forty years a horse-dealer at Hull, remembered going to Parsons' stables on January 18th, 1877. He tried at that time to purchase a bay gelding (the one in question). It was rising five years old, and had not a milk tooth in its head. He failed, however, to buy the horse at the time, but went back in the afternoon and saw Mr. Murdoch examining it for Mr. Swann. It was eventually sold to Mr. Swann.

WILLIAM F. GREENHALGH, verterinary student, New Veterinary College, Edinburgh, remembered the plaintiff examining the horse in question for Mr. Swann. He (witness) examined the horse at the same time and he was sure the horse was rising five years old, because the corner milk teeth were out and the permanent corner incisors through the gums in their places. He remembered the occasion by something that happened at that time.

This concluded the plaintiff's evidence and the case was adjourned to October 21st.

DEFENDANT, OCTOBER 21ST.

AT the adjourned hearing on the 21st. inst., Mr. Ferns addressed the Court on behalf of the defendant. He said that his Honour would be well aware that the case now assumed a different shape to what it did when it was before him on the last occasion, and he thought he had some matters to submit which would be well worthy of consideration at the hands of the Court. The plaintiff sued the defendant for £3 4s. 6d. for commission in connection with the examination of a horse which was subsequently purchased by the defendant, the plaintiff having certified that the horse was at that time rising five years old.

The learned counsel, he said, admits that there has been a mistake, and the defendant sets up a counter-claim because of that error of judgment; and the question now is, whether that mistake has been the result of either negligence or a want of professional skill. The learned gentleman (Mr. West) called a *posse* of witnesses, all highly respectable, and men of the highest position and skill in their profession. Why he did so I do not know; but I am sure that, notwithstanding the distinction some of the gentlemen enjoy, that will

not prejudice the defendant in your Honour's mind. As to the question of the counter-claim, if the plaintiff had given proper advice with respect to the horse in question, certainly nothing would have been heard of that claim; but that a certificate was given, which was inaccurate, is unquestionable. That point might be taken for granted at once. It is not imputed that there was fraud in connection with the examination of the horse's mouth; but there were such indications of the condition of the mouth of the animal as ought to have struck the attention of a skilful veterinary surgeon. There was the admission that the incisors had been extracted, and that was an indication of fraud which ought to have struck the attention of Mr. Murdoch.

The Judge: Is not the question here rather whether a horse, which had only just turned three years old, was capable of doing the work of one which was actually rising five?

Mr. Ferns: The plaintiff told you that the mouth was in a condition which a veterinary surgeon would have recognised as that of a five-year-old horse. The foal teeth had been extracted, he said, and therefore any veterinary surgeon, on examining the mouth, might very easily be deceived.

The Judge: You say he ought to have shown that knowledge which would have enabled him to call the attention of his employer to the fact that there was something wrong in the mouth—that it had been tampered with—that something had been done in order to make the horse appear that which it really was not.

Mr. Ferns said his Honour should bear in mind that not one of the eminent men who had been called had themselves seen the horse in question, and he should, in opposition to their theory, call a number of skilled persons who had seen the animal, and would express quite a contrary opinion. Mr. Murdoch said the foal teeth had been extracted, and these had made room for permanent teeth. An apprentice was called, who was also present at the examination, and he said the teeth were not half grown, but were developed in the jaw. This was the only substantial evidence before the Court as to the real position of the horse's mouth; and what reliance could be placed on Murdoch's story, when he told the Court that the teeth which were commonly extracted still remained there, and excited no suspicion of fraud in his mind.

The Judge: That is not exactly so. You dispute that he has exercised the ordinary caution expected of a person in his position, and that, therefore, he is not entitled to his fee; and that he was taking advantage of the confidence placed in him, because of his professional position. What do the witnesses say relative to the condition of the mouth of this horse, and is there anything inconsistent in their statements with the supposition that the plaintiff's judgment was true and reliable? Your case appears to be that the witnesses for the plaintiff have come forward to make statements which were untrue. That is the position in which you stand, unless you can show that the plaintiff is a person entirely ignorant of an essential element of his professional knowledge; and that, had he not shown that want of skill, the certificate would not have been given.

Mr. Ferns said there was no fraud alleged, but if the conduct of the plaintiff was such as was inconsistent with a knowledge of his profession, surely he ought to be held liable for the error of judgment which undoubtedly had taken place.

Mr. West said either there should be a plea of fraud, or else no such suggestions as these should be made.

The Judge: There is certainly nothing in the evidence to warrant any such imputation.

Mr. Ferns hoped that they would wait till they had proceeded further with the case. He had competent veterinary surgeons himself to call, and he would not have taken up this view of the matter had he not very good grounds for the observations he had already made.

The Judge: Still it requires strong evidence to impress the mind of the Court with the idea that a gentleman of practice, like the plaintiff, can have shown such a want of skill as you would impute.

Mr. Ferns: The breeches-pocket influence is very strong indeed with many people.

The Judge: The issue I thought I had to try was whether, under all the circumstances, Murdoch had exercised that skill which the defendant was entitled to claim at his hands? Of course, if you put it to me that Mr. Murdoch, being employed by Parsons, and knowing the defect in the horse's teeth which you allege, lent himself to the sale, it would be a case of fraud, and I should advise you not to make that allegation.

Mr. Ferns: My client will not go to that extreme, but he will tell you that he asked Mr. Murdoch if he did business for Parsons, and Mr. Murdoch replied that he did not; and added that he did not even know him.

Mr. West: Surely this ought to have come out by cross-examination?

Mr. Ferns: I went as near the wind as I could.

Mr. West: You did not ask a single question on that point.

The Judge: You ought to have raised the issue on the pleadings. If the case had been before a superior court, there is no doubt that you would have had to make this part of the pleadings. If I had known that this issue was likely to have been raised, I should have sought the aid of a jury.

Mr. Ferns: But it was in consequence of the express answer of the plaintiff that he did not know Parsons.

Mr. West: It is a great pity, but the matter now to be considered is the challenge thrown down, to the effect that Murdoch did not know either Parsons or his place of business.

The Judge: I think that is too bad. Was there here that sort of negligence which damaged the defendant, and, if so, what is the extent of that damage?—That is the issue.

Mr. Ferns: And there might have been that negligence which every one of the plaintiff's witnesses, with the exception of Prof. Williams, admitted there might have been, without incurring any neglect of professional skill.

The Judge: Two of them said that they themselves *had* been deceived.

Mr. Ferns said that they had a right to expect reasonable skill from a person in Mr. Murdoch's position, and if he showed that in this instance the plaintiff did not manifest a reasonable amount of skill, such as the defendant was entitled to at his hands, that would be sufficient for him. Now he would ask the attention of the Court to the facts which he should prove. The defendant had paid £100 for a horse, which, had the certificate not been such as it was, he never would have purchased, and Mr. Murdoch himself was obliged to admit that if the horse had only been rising three years old, £40 would have been too much to pay for him.

The Judge: I think he did not say that. What he said was that a horse coming four years old would not be worth as much as one coming five.

Mr. Ferns went on to say that he should call evidence to prove that when this horse was sent to Middlesboro' it was found that it was not up to its work. Two first-class veterinary surgeons were called in, and gave their opinion as to what was the matter with the animal, and they made the discovery that the horse was not the age which Mr. Swann had been led to suppose. Then some correspondence ensued, and the question arose as to the genuineness of the certificate. The question mainly to be considered was whether the foal teeth had been removed for the purpose of deceiving the

purchaser, or whether there had been an error of judgment, which might even have misled the most skilful veterinary surgeon.

The defendant, EDWARD WILLIS SWANN, was then examined by Mr. Ferns. He said he was an iron merchant at Middlesboro'. In January, 1877, he asked Mr. Murdoch to examine a horse at Parsons'. After the animal had been put through the usual stable exercises he expressed a wish to buy him, and asked Mr. Murdoch to examine him. Parsons had before that stated that the horse was rising five years old. After the exercise which the horse had been put through, and had cooled down, a final examination took place. In two or three hours afterwards he went to the stables and found Mr. Murdoch there. He then asked him if the horse was sound, and he said it was, and on the following day gave him the certificate in question. Believing in the truth of that certificate the horse was sent to Middlesboro'. Almost immediately after arrival he was tried as a carriage horse, but showed great weakness, and was not able to do his work. He was properly tended, but still he did not perform as it was expected he would do. He therefore called in two veterinary surgeons, Mr. Elliot and Mr. Adamson. The first examination was by Mr. Elliot on the 7th of April, and the second on the 17th. In consequence of the opinion those gentlemen expressed he came over to Leeds and pressed Mr. Murdoch to go with him to Parsons', with a view to take the horse back. Mr. Murdoch rudely declined to have anything to do with him, stated the horse was of the age he had certified, and was simply suffering from a cold, and that if they gave him gruel he would be soon all right. He did not give him gruel, because it was unnecessary; but he was obliged to withdraw the horse from the work for which he was intended, and put him out to grass. During the whole of the twelve months he was not able to do the work, and the loss sustained by him during that period would be about £30.

Cross-examined by Mr. West: Mr. Murdoch examined the horse's mouth in his (witness's) presence, and his assistant examined it also. He did not at that time examine the horse's mouth himself. He found out the horse was not rising five years old shortly after the arrival home. Mr. Elliot told him the horse was rising four years old, but was an over-grown horse for his age He did not recollect that Mr. Elliot told him the foal teeth were in, but he. said it was a backward horse.

Re-examined by Mr. Ferns: He thought if the horse was not able to do its work at the time he bought it, the advice which had been given him was not very valuable.

Mr. THOMAS ELLIOT, M.R.C.V.S., Middlesboro', said on the 7th of April, 1877, he was called in by Mr. Swann to examine the mouth of this horse, and he thought it was a three year old rising four. The development of the teeth led him to this conclusion. The horse had the central incisors fully grown, and the laterals were not quite grown, as the corners or sucking teeth were there. On the 17th he and Mr. Adamson together inspected the horse, and the mouth was exactly the same then. They neither of them had any doubt at all that the horse was then a three year old. If that had not been the case those central and lateral incisors would have been replaced by permanent teeth. In a horse aged three and a half years old, and another aged four and a half, there would be very different indications in the development of these teeth. From all the indications he had no doubt at all that the horse was only a rising four year old. Any skilful professional man having had a full opportunity of examining the mouth of that horse could not but have come to the same conclusion.

Cross-examined by Mr. West: There would not be much difference in the mouth of a horse foaled in March and another foaled in August. If a horse was foaled in March he would be considered no older than if he had been

born in May. If a horse was born on the 31st December he would not reckon the same as if he had been born on the 1st January. He had never heard of a three year old being made into a four, nor of a four year old being turned into a rising five ; but it was a common practice to extract the teeth. He had never, to his knowledge, seen a horse's mouth that had been tampered with. What were you before you were a veterinary surgeon ?—An apprentice to a builder. He had heard the evidence for the plaintiff, and he did not agree with it. The milk teeth were evident to anybody who made a careful examination. Any one with merely ordinary knowledge must have seen it, and certainly both veterinary surgeons and horse dealers ought not to have been deceived in such a case.

Mr. THOMAS ADAMSON, M.R.C.V.S., Darlington, said he had been in practice twenty-four years. On the 17th April he was called in to examine a horse for Mr. Swann, and Mr. Elliot was present. He examined the horse, and found him rising four years old. He came to that conclusion from the state of his mouth. The three central teeth were permanent, both top and bottom, and the lateral teeth were just protruding. The others were the foal teeth. He had never seen a horse's mouth that had been "doctored," and he spoke from experience of twenty-four years when he said that the age of this horse was not rising five years old.

Mr. JAMES CARTER, horse dealer, Middlesboro', said he had generally from seventeen to twenty-three horses under his care. On the 17th April he went to Mr. Swann's, and found this horse to be a rising four year old.

Cross-examined by Mr. West : He had never been deceived in the age of any horse under seven years old, and no practical man ought ever to be deceived. He had never known of any horse's mouth being tampered with for the purposes of sale, and no practical man should be deceived by any such tampering. There would be a wide difference in any case between the mouth of a horse just turned three years old and another approaching five.

Re-examined by Mr. Ferns : The mouth of this horse had not been tampered with when I saw it in April.

SAMPSON HORSLEY, of Middlesboro', said he had been a farmer, and was accustomed to horses. He had examined this horse, and found him to be turned three years old. There could have been no deception, for the foal teeth had not started up at all ; they were firm, and in their proper place.

JOHN RIDDER, farmer of Hull, was in March, 1877, resident at Middlesboro', and was asked by Mr. Swann to look at a bay horse, and he found him a three years old, rising four. The corner teeth were foal teeth, and had not been tampered with.

MATHEW HEDLEY, V.S., corroborated the evidence of the previous witnesses with respect to the condition of the mouth of this horse, and was of opinion that no veterinary surgeon of ordinary skill could be deceived by it, or ought not.

JOHN FRYER, V.S., Kirkby Fleetham, and THOMAS PLEWS, of Stockton, gave confirmatory evidence.

Mr. West then replied upon the whole case, and contended that this was not at all a case of an unscrupulous farmer or dealer having attempted to deceive a purchaser. There was an abundance of evidence that men of the greatest experience might possibly be deceived in an investigation such as the horse had undergone in this case ; but also the Court should have very much regard to the contradictions of the witnesses. What appeared to be distinct and plain enough was that the appearances of a horse's mouth might easily mislead the most experienced practitioner. That Mr. Murdoch was a man of considerable experience could not be denied ; and if it were possible to practice a deception of this kind, it might happen in the case of Mr. Murdoch as well as with those eminent witnesses he had called, and whose

evidence made out the strongest possible case for the plaintiff. The plaintiff had been asked to examine this horse for the purposes of age, and Mr. Murdoch took the condition of the mouth as he found it, and gave an honest opinion. His assistant also, who must have had some experience in these matters, spoke in confident corroboration of the plaintiff's evidence. It should be observed by the Court that cases of this kind had occurred more than once. He need scarcely mention the "Running Rein case," in which some of the best judges of the country might have been taken in. The Court should not forget that here it was not charged that there had been any wilful deception, but that the plaintiff had been negligent. He contended that the evidence, which was of as formidable a character as perhaps ever was imported into a case of this kind, all inclined to the side of the plaintiff, and, taking into consideration that imputations had been made upon the plaintiff which had either been withdrawn or not at all substantiated, he thought he had presented a case for the consideration of the Court which would entitle the plaintiff not only to a verdict, but to the vindication of his character as a man of skill and sound reputation.

The Judge reserved his decision until the 11th of November.

On the re-assembling of the Court on that day, the Judge said that he had very minutely examined the evidence, and had come to the conclusion that the animal sold in this transaction was three years old, but rising four. The case for the plaintiff was this—"I am a professional man of great experience, and to the best of my judgment this horse was of the age which I have stated in my certificate." But it was a well-known fact that a horse three years old and rising four was not fit for carriage practice. The strength of the animal was developed as far as could be, and as far as the plaintiff's experience went the horse could not do the work. If the plaintiff's story was true, there was undoubtedly a cruel practice of horse-dealers to tamper with the mouths of horses, so as, as far as they could, to reverse the appearances. The only witnesses called as to the actual condition of the mouth at the time were Parsons, the assistant, and another witness; and they spoke of the presence of the four permanent teeth; the evidence of all the scientific men admitted that they might have been deceived, but all their evidence proceeded upon the "if." On the 17th, of April Mr. Elliot was called in, and he found the four sucking teeth still there, and in his opinion a man of ordinary skill ought to have perceived them. His Honour could understand that upon this point even the most eminent men could disagree; and it was admitted that Mr. Murdoch was a man of skill and experience. But there was the evidence of Mr. Carter and others, who were all well-accustomed to horses, and they spoke confidently to the presence of the teeth, which indicated that the horse was younger than the plaintiff had stated him to be. His Honour could come to no other conclusion than that the plaintiff was not entitled to his fee, and the verdict must be for the defendant. With regard to the counter-claim set up by Mr. Swann, he did not think it was a case at all for vindictive damages. He absolved Mr. Murdoch entirely from any blame in this matter, and as to there being any collusion between him and Parsons, any one who had heard the case could not entertain that idea for a moment. It was the same as a surgeon or barrister; there might have been an error of judgment. But under all the circumstances, he must give a verdict for the defendant in the first case; and, as regarded the counter-claim, he thought a verdict for £15 and costs would meet the ends of justice.

Mr. Turner, who appeared for the plaintiff in the absence of Mr. West, said: I hope it is understood that the costs will be under £15, and I hope your Honour's attention has been called to the fact that the defendant worked the horse from January to April.

The Judge: They took the horse to grass.

Mr. Turner : But not until the end of April. If the examination had taken place on the 1st of May, according to the rules of the trade, Mr. Murdoch would have been right in pronouncing the horse to be between four and five years old when the examination took place, but Mr. Swann had worked the horse until the 19th of April, and then the examination took place.

The Judge : He tried to work it.

Mr. Turner : He had actually worked it. A period of two or three months had transpired.

The Judge : All these things I have taken into consideration, and I am not at all disposed to alter my verdict.

Mr. Turner : I wish to call your Honour's attention to the fact that the sum which you have awarded was not altogether for the examination of this horse. Mr. Murdoch went to Heppers with Mr. Swann, and there were several telegrams and other services.

The Judge : But the only thing before me was the examination of this horse.

Mr. Ferns : And the evidence was irresistible.

The Judge : Well, what you (Mr. Turner) have mentioned may be a ground for an application for a new trial ; but in this case I have had no other evidence before me except that for professional services. I have had no other evidence before me whatever. It is evident that whatever other services there have been, they were part of the *res gestæ*. After hearing Mr. Turner again on the question of costs, his Honour decided to give a verdict for £15 on the counter-claim and the costs to be settled by the taxing-officer.

QUEEN'S BENCH.

VETERINARY SURGEON'S LAW EXPENSES.

PRITCHARD V. M'MAHON.

ALTHOUGH the amount sought to be recovered in this action—tried on November 27th—was small, the question raised is of considerable public and professional importance, being whether a witness who attends in obedience to his subpœna is entitled to remuneration for his loss of time as distinguished from his expenses.

Mr. Murphy, Q.C., and Mr. Jervis appeared for the plaintiff ; Mr. Gully, Q.C., for the defendant.

The plaintiff is a veterinary surgeon and a Fellow of the Royal Veterinary College of London,* and the defendant is a horse-dealer living in Ireland. In 1877 the defendant brought an action against a Mr. Franks to recover the price of some horses. The plaintiff was served with a subpœna to give evidence on behalf of the plaintiff in that case, the present defendant. It was uncertain when the case would come on, and for nine days, until he received a letter from the solicitors for the defendant, he did not know whether he would have to attend the trial or not, and he could not make any professional engagements for those days, not knowing whether he would be able to keep them or not. On the 29th of November the case was in the list for the day, and the plaintift attended in court ; but owing to the turn which the case took he was not called as a witness. He was paid a guinea for conduct money when the subpœna was served, and before action another guinea was tendered to him, and, being refused, was paid into court. He claimed two guineas a day for loss of time for each of the nine days for which he had to

* This is the title which appears in the newspaper report of the case.—ED. *V.J.*

hold himself in readiness, and five guineas for the day on which he attended the trial. Other actions are pending by veterinary surgeons who were also served with subpœnas, but it had been agreed to try this case as a test case.

His Lordship, upon these facts, directed judgment to be entered for the defendant, following a case in the Court of Queen's Bench, in which it was held that, as the witness was bound to obey the subpœna, there was no consideration for any promise which could be inferred on the part of the person serving him to pay him.

Army Veterinary Department.

Gazette, November 29.

VETERINARY DEPARTMENT.—R. Moore, gent., to be Veterinary Surgeon on probation.

Gazette, December 13.

VETERINARY DEPARTMENT.—Francis Raymond, gent., to be Veterinary Surgeon on probation.

Obituary.

THE following deaths have been reported to the Registrar of the Royal College of Veterinary Surgeons, during the last three months, by members of the profession resident in the localities where the deceased have been in practice :—

			Diploma dated.
Mr.	David Young	late Hamilton, Lanark	April 24, 1865.
„	John French	„ Chelmsford	July 12, 1830.
„	John Martin	„ Stratford, Essex	Aug. 18, 1836.
„	Benjamin Pilcher	„ Ramsgate	1826.
„	John Powell	„ Newport Pagnell, Bucks	Jan. 22, 1842.
„	William Price	„ Newport Pagnell	Dec. 14, 1820.
„	William Butler	„ Buckland, Berks	May 9, 1837.
„	Hugh Atherstone	„ Derby	Jan. 18, 1820.
„	Joseph Carlisle, Jun.	„ Carlisle	April 24, 1866.
„	John McLean	„ Edinburgh	April, 1837.
„	William Aitkin	„ Edinburgh	April 25, 1849.
„	James Pennock	„ York	Nov. 25, 1830.
„	John Brown	„ Doncaster	1815.
„	George Thos. Baker	„ Wrexham	April 24, 1867.
„	Edward Hore	„ Penzance	April 29, 1863.
„	George Hain	„ Thirsk	May 1, 1862.
„	George Sargisson	„ Bishops Waltham	April 29, 1846.
„	Austin Cooper Shaw	„ Hatfield	May 7, 1843.
„	Thomas Rawlinson	„ Liverpool	April 16, 1821.
„	John Ryding	„ Prescot	1813.
„	Richard Leal Shaw	„ Clapham	May 4, 1861.
„	Robert Collett	„ Stafford	May 4, 1821.
„	Henry Fishwick	„ Gargrave	May 22, 1846.
„	George Wildsmith	„ Burton-on-Trent	Jan. 6, 1835.

Notes and News.

BOOK PIRACY IN AMERICA.—An American publisher, in New York—Mr. Albert Cogswell—has pirated (*i.e.*, re-published without payment, permission, or acknowledgment) Mr. Hill's recently published work on the "Management and Diseases of the Dog." We ourselves have suffered from this species of dishonesty, so we can sympathise with Mr. Hill. We can offer him no redress, however, as nothing is published in the United States worth republication in this country, so our authors and publishers have no opportunity for retaliation. The advantage is all on the side of the 'cute Yankee publisher.

PRIZE ESSAY ON DAIRY MANAGEMENT.—We are gratified in learning that Mr. W. Chambers, M.R.C.V.S., Government Veterinary Inspector, has been awarded by the Cork Agricultural Society Mr. Tivy's prize of £20 for the best essay upon dairy husbandry.

A DEAF-MUTE COW.—An interesting case of the occurrence of deaf-muteness in a cow is recorded in the *Veterinary Review*, edited by Dr. Haubner. The animal has been for twelve years in the possession of her present owner, who bought her as a calf when only three weeks old. No amount of noise appears to attract her attention in the slightest degree. When left alone in the stall, or when her calf is taken away from her, or again, when feeding-time is due, she goes through exactly the same movements as the other cows that are lowing, stretching out head and neck, and opening the mouth wide, but no distinct sound is uttered. She is extremely watchful of everything that goes on around her, and an unusually acute sense of vision appears to make amends in some degree for the defects in other senses. Nothing abnormal can be found on examination about the ears or throat. She has been the mother of eight calves, but nothing is known as to whether any of these were similarly affected, as all of them were slaughtered very shortly after birth.

DOGS IN CONNECTICUT.—The several towns of Connecticut pay 12,000 to 15,000 dols. annually for sheep killed and maimed by dogs. The legislature, recently adjourned, passed a law requiring those who propose to indulge the luxury of owning a dog to pay a licence fee of 2 dols. 15 cts. for each male, and 6 dols. 15 cts. for each female dog. This is backed up by a fine of 7 dols., or imprisonment for thirty days, of the owner who fails to register his dog.

SALICYLIC ACID IN ARTHRITIS OF LAMBS.—In the course of an article which appeared in the *Deutsche Landwirthschaftliche Presse*, Herr J. Tornwaldt strongly recommended salicylic acid as possessing an almost specific action in the paralysis of lambs from two to six weeks old, so frequently met with. Whether the attack be due to cold, mal-nutrition, or individual predisposition, the symptoms of the disease are much about the same—consisting in lameness, swelling and stiffness of the joints, especially the knee and hip, retracted belly, loss of appetite, and strong fever succeeded by clonic cramps. Endless remedies have been tried, among which flowers of sulphur, Epsom salts, castor oil, sulphide of antimony, cod liver oil, iodine ointments, and strychnine, figure conspicuously; but none have been found of much effect. Having frequently observed the beneficial action of salicylic acid in cases of Rheumatic Arthritis among men, Herr Tornwaldt was induced to give it a trial on his lame lambs. Its success succeeded his highest expectation, more especially in cases where the disease had been detected at the outset, and the animal promptly submitted to treatment. Cases of longer standing than a week are less amenable to the action of the medicine, but even here very

good results have been obtained. As regards the form of administration, Herr Tornwaldt prepares a solution of one part of salicylic acid in 200 parts of spirits of wine and 100 parts of water, and gives a spoonful of this as a dose every two hours. Repeated small quantities act better than one large dose. An improvement is often noted within the first twenty-four hours, and in the vast majority of cases a cure is effected by the third or fourth day at the latest.—*The Farmer.*

LONGEVITY OF THE HORSE.—At Rochester, New York county, there died on September 12 last, the oldest horse on record for a number of years. He was the property of the famous Daniel D. Bell, of legal as well as gold-mine notoriety. He was known by the name of Gumbo, and in his day was a noted stallion. Many citizens of Kingston and of Ulster county remember the animal as a splendid horse when they were boys. At the time of his death he had attained the ripe age of forty-five years and six months. He retained a remarkable vitality to the last, and for three-quarters of an hour before his demise he stood upon his legs, proud and majestic, as in his younger days. He had long been the property of Bell, who had driven him many thousands of miles in his life-time, he having owned him a period of twenty-seven years and a half—since he was eighteen years old.

SWINE PLAGUE IN AMERICA.—In view of the prevalence of hog-cholera at the West, the *Chicago Tribune* advises everybody to become Jews—indeed to the extent of eschewing the flesh of swine—as the only sure way of escape from possible unpleasant results.

HORSE FLESH AS FOOD.—Regulations have been drawn up and officially published by the Government in Schleswig relative to the slaughtering of horses whose flesh is intended for sale as human food. These provide that every such animal must be carefully examined as to its condition of health by an approved veterinary surgeon, and that the slaughter-houses and flaying places must be distinct from the business premises where the meat is exposed for sale.

SARCOMA IN OXEN.—At a meeting lately held at the Turin Academy of Agriculture, Prof. Perroncito read an interesting paper on the *Actinomyces bovis* of Hars, and the part it plays in the production of the Sarcoma of oxen. He agreed with Prof. Bollinger as to the frequent occurrence of the fungus in question, but entertained serious doubts whether it can be rightly described as the active cause of the development of Sarcoma in cattle. His reasons for the conclusion are founded on the following facts: (1) That sarcomata are frequently met with in which *Actinomyces bovis* cannot be found. (2) On the presence of ulcers and fistulous tracts opening exteriorly, or communicating with natural cavities, which can be thus put in communication with the external air. (3) On the negative results that attended the inoculation of animals with fresh matter containing the fungus which is supposed to give rise to the disease.

GENTLEMEN HORSE DEALERS.—We unhesitatingly assert that no one who is a gentleman can, if he turns horse dealer, remain so, however much he may wish it, or try to keep himself from the numerous vices that attend this trade. It is an unequal fight, surrounded on all sides by trickery and lying in every form. Sooner or later, he is bound to succumb, and, his self-respect once gone, we know the result—he is a lost man. That there are honest horse dealers we do not deny; in fact, most of the leading are thoroughly trustworthy, but of them we are not speaking; it is to the gentleman ex-officer, who, unfitted for aught else, takes to the line of business, that we are issuing a note of warning, and if there be any who are meditating such a step, and who happen to read these lines, we repeat *Punch's* oft-quoted monosyllabic advice, "Don't."—*Examiner.*

A CURIOUS CUSTOM IN CABUL AND OTHER PARTS OF CENTRAL ASIA.—They have a curious custom in Cabul and Central Asia in selling a horse. A man wanting to dispose of one is desirous that the horse should not be aware of his wish to part with him, the fear being that if the beast knew that his master wished to get rid of him he would take it to heart and lose flesh, and consequently decrease in value. From this strange idea the sale of a horse is carried on in silence, so that the animal may not hear. The two men put their hands under their kummurbands, and the price in rupees is indicated by repeated pressure on the fingers, but not a word is uttered during the bargain.

MAIZE AS FOOD FOR HORSES.—The attempt made in France to feed horses on maize instead of oats has failed. According to reports sent in by French army officers to the Government, it has been found that in whatever proportion maize be substituted for oats, loss of muscle and energy manifests itself, besides which the horses sweat inordinately, and are easily blown. The Ministry of War has directed this system to be discontinued. The Paris cabmen, too, unanimously denounce maize-feeding as a delusion and a snare. France is not the only country in which the substitution, partial or entire, of maize for oats has failed to meet with general acceptance. The Austrian Minister of War, having been asked to make this change, declined to arrive at any decision upon the point until the experiment had been tried upon a large scale and for a considerable period. It was accordingly arranged that 5,200 horses, of which four-fifths were taken from the cavalry and the remainder from the artillery and train, should be fed partly upon maize for a period of six months; and Professor Bruchmüller, who was appointed to follow the experiment, has just sent in his report. It is to the effect that most of the horses, after a slight hesitation at first, soon took to the new food, and digested it very well even when it was given them whole and without being soaked. The horses increased in weight, and their coats got to shine like satin, but they seemed to lose in vigour as compared to those fed upon oats. This was especially noticeable in their fast paces, and it was also remarked that they sweated much more profusely. In the southern provinces of the Austro-Hungarian empire, the animals fed on maize did better than those in the northern part, and this harmonizes with the known fact that the heavy draught horses used upon the farms in the south of Hungary and Croatia do very well upon this food. Professor Bruchmüller states that the Vienna Tramways Company, which has made similar experiments upon its horses, found that the saving in the cost of food did not compensate for the loss of power and speed; and his conclusion is that maize can only be used to advantage for horses that are not required to move out of a walking pace.

DOGS IN NEW YORK.—It is authoritatively stated that during the "dog days" of 1878 there were captured in New York City no less than 6,783 dogs, of which number 6,080 were drowned, the remainder being released, or sold, or "on hand."

ABNORMAL LACTATION IN A CALF.—The Brussels veterinary journals record a case that came under the notice of Professor Laho, of that city, last year, of a cow calf of Dutch breed, in which the secretion of milk was developed at a particularly early period. The udder began to swell when the animal was only two months old, at which time the animal contracted a persistent habit of sucking it. When six months old the udder was fully distended, and thenceforth the calf was regularly milked each day. At the end of the eleventh month the general bodily development was very backward, but the calf still continued to give four and a half litres of milk daily, which differed only from that of a full-grown cow in containing a somewhat larger proportion of water.

RABIES IN COWS.—A Geneva journal named *La Salute*, conducted by Dr. E. Maraglione, recently published some interesting particulars of a well-authenticated outbreak of rabies among cows which occurred on a farm at St. Colombie, in the Canton Haglinvan. In the beginning of October several cows belonging to a M. Duboy were bitten by a dog belonging to the herdsman. The dog was at once tied up, and from that moment it declined to eat, and died after some days of suffering, exhibiting, among other symptoms, complete paralysis of the posterior half of the body. On November 2nd, three of the cows that had been bitten refused their usual food; a viscid saliva flowed from their lips; their bellowing could be heard at a distance of 3 kilometres. Shortly afterwards some paralysis of the hind limbs was noticed, and on the sixth day they succumbed, paralysis of the entire posterior half of the body being then complete. During the whole progress of the disease the animals showed no disposition to bite, nor were in any way savage; but the accidental presence of a dog excited them in an extraordinary manner. By the end of three months eleven of the herd had fallen victims to the disease, the period of incubation having ranged from twenty-five or thirty days in the first case to fifty-six or more in the three last animals attacked.

EXTIRPATION OF SHEEP-TICK.—In a communication addressed to the editor of the *Praktischer Landwirth*, Herr Köhne, of Nettelbach, recommends the employment of ordinary mercurial ointment as the best means of getting rid of the *Melophagus ovinus*. The ointment should be rubbed along the back and under the throat of each animal directly it is shorn, a second application being made eight or ten days later to secure the destruction of any stragglers that may have escaped the first, and of such insects as may have been hatched out subsequently to it. From long-continued personal experience Herr Köhne is able to state that this method of treatment is absolutely successful in its results, and at the same time perfectly harmless.

SUBCUTANEOUS INJECTION OF CARBOLIC ACID IN BLOOD DISEASES OF SWINE.—A correspondent of the *Deutsche Landwirthschaftliche Zeitung* sends the following communication on this subject to the editor of that journal:—"For some years past an epizöoty has prevailed among the swine in our neighbourhood, to which many of them have fallen victims, and which is commonly erroneously described as Erysipelas, or St. Anthony's Fire. The course of the disease is extremely rapid, and the symptoms usually observed are loss of appetite, followed in a few hours by cramps and foaming at the mouth. The result is invariably fatal. In nearly all the affected animals red spots appear upon the skin shortly before or at the moment of death, whence apparently the disease has been mistaken for Erysipelas. This disease broke out in my own sties and destroyed many of my stock, after the majority of the swine belonging to my workpeople had already been killed by it. My family doctor suggested to me that, as it apparently depended upon some kind of blood-poisoning—*bacteria* being invariably found in the blood—the subcutaneous injection of very dilute carbolic acid might possibly be of service. This was tried at once on a diseased animal belonging to a neighbour of mine, and subsequently on my own pigs when the disease again broke out among them. The solution used contained two parts of carbolic acid in the hundred. The effect was astounding, for every single animal thus treated recovered quickly. Two years passed away before I had again an opportunity of testing the efficiency of this plan, but recently several fresh outbreaks of the disease have occurred, and in every instance the treatment was as successful as before. Considering that all the cases I had met with before resulted in death, and that veterinary surgeons, as a rule, pay but little attention to diseases of swine, I feel it my duty to publish

my experiences in the interest of my colleagues and of the many agricultural labourers to whom the welfare of their pig is part and parcel of their own. Possibly, professional men may take the matter up and find in subcutaneous injection a remedy for many other diseases. It is easily practised on any animal, while, on the other hand, it is often a difficult matter to introduce medicines into a pig's stomach. The plan is very inexpensive—an injection syringe suitable for the purpose costing but a few shillings—and the operation itself is extremely simple ; a fold of the skin is pinched up between the finger and thumb of the left hand, the nozzle of the syringe is inserted at the bottom of this, and the fluid contents deposited in the subcutaneous cellular tissue by a gradual pressure on the piston. The operation should be repeated in three or four parts of the body.

OATS AS HORSE'S FOOD.—A French horse-owning company has recently been making some experiments on the nutritive power of oats, the results of which are that oats weighing 52 kilogrammes per hectolitre (about 42 lbs. the bushel) were found to contain 9·5 per cent. of muscle and flesh-forming substance, whilst oats of the same description weighing 38 kilogrammes per hectolitre (or about 30 lbs. the bushel) only gave 7·9 per cent. Comparatively small as the difference appears, it amounts to this—an 8-kilogramme (17½ lbs.) ration of the former contains one-fifth more nutriment than the same weight of the lighter oats.

SHEEP IN SOUTH AUSTRALIA.—The report of the Chief Inspector of Sheep for South Australia for the first half of 1878 has been published. During the earlier part of the period drought was exceptionally severe, and everywhere a great scarcity of feed prevailed. As might have been expected, it is amongst sheep that the greatest mortality has taken place. In addition to the victims of the drought many died from devouring poisonous plants, and others from "hove" and other causes. On the other hand, the flocks have fortunately enjoyed a gratifying immunity from disease. Fluke has not been active, nor has it extended ; scab has not been experienced ; and no other infectious or contagious diseases have manifested themselves. Cattle, too, are healthy, but many have died from the effects of greedy feeding, and their numbers have, in addition, been thinned by pleurisy, acute indigestion, and pleuro-pneumonia. A disease similar to that known in England as "skirt" has destroyed a number of working bullocks. Its symptoms are the same as those of Pleurisy, and inflammation of the diaphragm. It is thought that it is not contagious, but it is probably brought on by cold winds, exposure, and the want of proper nourishment. It is principally in the north that Pleuro-pneumonia has shown itself, although it has existed also in the south-east. Vigorous measures have been taken by the inspectors to check the spread of the disease ; many cattle have been destroyed, and those in a doubtful state of health have been isolated. In the south-east horses have largely shared the fate of the cattle. Partly in consequence of the deterioration of pasture, and partly owing to the large growth of inferior grasses, many horses have succumbed, while several have died from acute inflammation of the feet. From this cause, it is stated, five horses were lost by one farmer alone in the south-eastern district. The importation of sheep and cattle from New South Wales and Queensland, and of horses from Victoria, has been carried on on a large scale.

THE mortality occasioned by the poisonous scum on the waters of Lake Alexandrina (see THE VETERINARY JOURNAL for September, 1878, p. 172), has been serious. No less than 16 horses, 51 head of cattle, and 784 sheep died from drinking this water, and these figures are said to be rather under than above the mark. The information made public in a report furnished by Mr. Francis as to the poisonous character of the scum has caused stock-

owners in the locality to exercise greater caution ; and the mortality is likely to be guarded against in the future. The chief inspector points out that owing to the difficulty of identifying brands and tracing the owners of cattle, it is impossible to destroy diseased animals running on the commons and in the hundreds. The labours of the staff of inspectors have by no means been light. During the half-year over 500,000 sheep, 15,000 cattle, and 3,000 horses were inspected by them, and their travels on duty extended to over 8,000 miles.

FEEDING CAKES FOR HORSES.—The *Landwirthschaftliche Presse* gives a very interesting description of this article of consumption in Russia, where it seems to be in favour, and where it originated. These cakes consist of 30 to 40 per cent. of oats, 30 to 50 of peas, 10 to 20 barley, 15 to 20 linseed meal and 1 to 5 per cent of salt. Every cake is 3½ inches in diameter, and ¾ of an inch in thickness ; from 26 to 28 of these cakes after being baked hard are strung on to a wire, and form a day's ration for a horse, being equal to about 11 lb. of oats. In Russia these cakes are used for the cavalry, and are strongly recommended for that purpose on account of their portability and their keeping properties. These biscuits have to be soaked in warm water before being used, and Dr. Emil Pott points this out as a difficulty of no slight importance when the army is in the field, as the operation takes time and a large quantity of hot water—things not readily available at such a time. Dr. Pott also thinks that the ingredients used are too expensive, and he gives it as his opinion that cakes made of beans, meal, maize, and even potatoes and chopped straw would be less expensive and answer the same purpose. For agricultural purposes it is thought that this mixture, baked in the ordinary way and kept for some weeks in a cool place, would be better than if baked hard as biscuits.

Correspondence, etc.

OUR FEES.—HONEST COMPETITION (?)

To the Editor of the VETERINARY JOURNAL.

SIR,—I venture to think that space in your Journal is not wasted which contains something of interest to the profession, and, whilst pointing this out to "Artemus Secundus," I wish to express my regret if my former letter has disturbed his mental equilibrium ; which I fear has been the case, seeing that he spells my Christian name in quite a different way than I and others do, and infers that I was not sincere in my remarks about the "sixpenny-touch." I only repeated what was mentioned to me ; and now should like to know if a certain professor is prepared to deny his examining horses, in a certain dealer's yard, at seven o'clock in the morning. A subscriber to the College of twenty guineas may send an unlimited number of horses to be examined as long as he lives. Supposing he be a dealer in a large way of business, and live twenty years, it is possible each examination would cost even less than sixpence.

I wish "Artemus Secundus" every success in his fresh venture, and the following remarks will illustrate the kind of "honest competition" (?) he may expect, as well as show the profession generally the baneful and degrading effect of the Upas tree it has allowed to thrive in its midst for so many years. Let him picture a gentleman negotiating with a dealer. The gentleman

proposes to send his veterinary surgeon to examine the horse ; this is met by the dealer producing a certificate from the College, obtained, as I have shown, for a fee which would disgust a 'bus-driver. I attend under contract the business horses of a large firm ; one of the partners keeps a number of horses for private use, and sought my aid on several occasions. On my requesting remuneration for my services, he seemed surprised, and expressed a resolve to send his horses to the College, where he could have them attended "*for nothing*." The necessities of another firm require my attendance three or four times a week ; and my fee for castrating three horses was strongly demurred to, because "when they subscribed to the College this operation was done *for nothing*.

The following letters are slightly interesting, and reflect the experience of a friend of mine, who, however, saved himself the insult by taking no notice of the injury :—

LONDON, *December* 18, 1874.

DEAR SIR,—I have the honour of attending the stud of Messrs. Edmd. Reddin and Co., Limited, of Southwark, and a case of *Purpura hæmorrhagica* having occurred, I paid the subject of it two visits on Tuesday last. At my second visit I was told that you had been there, and had arranged to send a conveyance to remove the animal to the College. I must say I was perfectly astonished at such a proceeding, and could hardly believe it was true until I saw Mr. Reddin, who informed me that one of his co-directors wished for another opinion regarding the horse—that you had been there, and had expressed your opinion that the animal was suffering from a contagious disease, and you wished to have it removed to the College for treatment. You must be aware that it is unlawful to remove an animal affected from a contagious disease ; and, for my part, I have yet to learn that Purpura is contagious. Of course, I explained the nature of the disease, and my ability to treat it as well as, if not better, than it would be done at the College; and as the force of my objection to his removal was evident, orders were given that he was not to leave his box. My object in writing is to say I consider that to endeavour to take a patient out of my hands to treat it yourself, without seeing if I had any objection, is a breach of professional etiquette only pardonable when committed by a farrier, or other person equally ignorant of such matters. I was always under the impression the professors of the College did not visit patients outside the institution, but as it seems they do, I hope they will try to merit respect by respecting any brother professional with whom they come in contact.—I am, &c.,

THOMAS MOORE.

Professor AXE,
Royal Veterinary College.

Royal Veterinary College,
December 19, 1874.

DEAR SIR,—I beg to acknowledge the receipt of your letter of yesterday's date, and in reply to say that I have handed it to the Principal of the College, who will give it his official attention.—I am, &c.,

J. WORTLEY AXE.

Mr. T. MOORE.

Royal Veterinary College,
December 19, 1874.

SIR.—Your letter to my colleague, Mr. Axe, has been handed to me, and I have seen fit to forward it to Mr. Reddin.—I am, &c.,

JAS. B. SIMMONDS.

Mr. THOS. MOORE.

This fitful effusion I took no notice of, and the Professor's letter to Mr Reddin, which was given to me (I refrain from publishing it, not having asked authority to do so) to answer, I treated with the contempt it merited; and I daresay Mr. Reddin followed my example. After a few years' practice here, "Artemus Secundus" will be able, in common with every veterinary surgeon in London, to corroborate my views on the "honest competition" business; and I trust he will be candid enough to acknowledge I have not exaggerated, and at the same time avoid anything like toadyism similar to that displayed at the Lancashire Veterinary Medical Society on October 21st last. I am surprised a "cordial vote of thanks" was not accorded to Mr. Turnips, the "Professor" in Waiting, for his "kind attendance," and skill in lighting the gas, seeing that another professor got one for less valuable assistance.

In conclusion, may I crave a little more space to say that several members of the profession have mooted the idea of calling a meeting to discuss the present anomalous state of things. I for one am willing to subscribe towards the expenses, and shall be glad to hear that others will co-operate.

I am, &c.,

THOMAS MOORE, M.R.C.V.S.

THE ARMY VETERINARY DEPARTMENT IN INDIA.

To the Editor of the VETERINARY JOURNAL.

SIR,—Having opened your pages for the ventilation of the grievances which exist amongst the members of the profession belonging to the Army Veterinary Department, allow me to say a few words with reference to the status and emoluments derived by those officers who unfortunately are quartered in India. The question of relative rank is one which has been frequently discussed, but is one which affects those at home in a very minor degree. To these officers, professional ability, and capability to sustain their position, are sufficient: relative rank affecting them, as it does, with reference to pay and allowances to such a small extent. Far different is it, however, in India, where pay is simply made up of allowances, and where these latter are entirely regulated by rank. Take, for example, the case of a veterinary surgeon who may serve 25 years in this country (India), and the only increase of pay he would receive from the day he joined would be 49 rupees a month; and this because he ranks only as a lieutenant. Let him, however, obtain his promotion—say after ten years' service—then the rise in his pay would at once be 121 rupees. Here, then, can the difference between the value of relative rank at home and in India be plainly seen; and until something is done to ameliorate the position of the junior officers, I fear dissatisfaction will reign in the Department. We are a long-suffering body—very few are the grumbles which escape from our lips—and on this account we see our brethren in the medical profession frequently obtaining new warrants, whereby their pay is vastly increased, while we remain in *statu quo*. Our warrant of this year (1878), instead of furthering our advancement, has simply placed impediments in our way. Can anything be more deleterious to a body of officers, than when expecting promotion after about ten years' service, to be told that they must wait until twelve years, and even then it is not vouchsafed to them; but they are simply informed that they will not be eligible before the expiration of this period. Now, let me say a few words to those about to enter the department under the ten years' system. The pay on first joining—viz., £250—is certainly enticing; but this, in all probability, would be enjoyed for a very short time, as their services would be required in this

country. They arrive here to find that no provision has been made for them —or, in other words, that they would draw the same pay as if they had joined under the old warrant at ten shillings a day. For the miserable pittance, therefore, of 377 rupees a month, a young veterinary surgeon has to risk his health, and even his life. Those who are serving under the warrant of 1859 are, however, more fairly treated; for, if invalided, they can obtain their leave to England on full pay, whereas candidates now entering, and who may not have completed five years' service, would, if, ill, find themselves placed on four shillings a day for six months; and if not capable of returning to duty before the expiration of a year, would have to forfeit their service, and receive no remuneration whatever, although their illness might be caused on service in these fiery plains. Certainly, the inducements to serve in India are not great. I spoke of Indian pay as given to veterinary surgeons until they are promoted to the rank of first-class as a miserable pittance. This I did to lay before your readers the case in its true light. It is usual to say that the pay is good—377 rupees, or £37 14s. a month. Let no one, however, be deceived. The rupee here goes no further than the shilling at home, and, in fact, its marketable value at the present time is slightly over 1s. 6d.; besides which, a young veterinary surgeon, on joining, will find that, although he may exercise the greatest care, after paying house-rent, servants, keep of horses, mess expenses, &c., very little, if any, will be left at the end of the month; and if, unfortunately, he be a married man, service in India would mean penury. I have spoken plainly, as I think it but right that officers on first joining should know what they have to expect. If everything is painted in rosy tints, it is only likely to lead to disappointment when the stern facts are realised. It must be remembered that the pay in India is consolidated, and includes everything; whereas at home it is net, and free from allowances. For example, free quarters are given, free light, forage and servants are allowed, whilst field allowance is granted if in camp, and a liberal sum whilst travelling or marching. From none of these sources do we in India derive any benefit; for, as I before said, the pay includes allowances of every description. What, then, is required is more speedy promotion, to enable us in this country to reap the benefit which accompanies relative rank. A veterinary surgeon in India, when promoted, is fairly well off; and if the new warrant is only made applicable to India, his position would be further improved. Under these circumstances it can readily be understood how disheartening it was to us out here when we saw that, instead of being hastened, our promotion was actually delayed.

The clausses of the last warrant which appear to me to especially call for amendment are:

No. 3.—Relating to relative rank.

No. 5.—Referring to forage. In this case the hardship is great. An officer, whilst in quarters, can only be said to require one horse; but for a month every year, whilst attending the summer drills, he certainly requires two. He then has either to purchase an animal for the occasion, and sell him afterwards, or is obliged to keep him at his own expense.

No. 15.—Making a veterinary surgeon eligible for promotion only after twelve years' service. And, lastly—

No. 20.—Were veterinary surgeons permitted to retire on their own accord, on the pensions laid down in clause 19, a few might be induced to do so. This would clear the way, and in some measure tend to hasten the promotion of the junior members of the department.

To further hasten promotion, could not another class be formed between Inspecting and First Class Veterinary Surgeons — these might be styled Brigade Veterinary Surgeons—as is proposed for the Medical Department by the Committee, which has lately drawn up a report on the

grievances of these officers. One of these could either be posted to each brigade of artillery, or to each head-quarters of a district, and would be of great service, especially with an army in the field. The work at present imposed on an Inspecting Veterinary Surgeon, with an army of, say 30,000 men—as is occasionally assembled at Aldershot—is excessive; and if the above proposition were carried into effect, it would tend greatly to relieve this officer, and would, I feel certain, ultimately tend to the benefit of the service.

One more subject to which I would allude is the little support which is given by Government to our profession, both at home and in India. On the Continent grants are annually voted, and every inducement offered to a veterinary surgeon from the day he becomes a student. But with us, on the contrary, itmay almost be said that Government throws cold water on everything which tends to our advancement. You have before noticed the liberal spirit which has induced the Principal Veterinary Surgeon to the Forces in India to offer the sum of 300 rupees for the two best essays on stable management and the causes of indigestion. From inattention to both these subjects the mortality is annually very great; and, notwithstanding this fact, this liberal offer has in no way been recognised; neither has the Indian Government added to the amount of the prize, nor has it taken any steps to publish the two best essays—a measure which would have tended greatly to disseminate knowled ge which would have proved most useful to veterinary surgeons on their arrival in this country. Had this step been taken, the mortality amongst troop horses belonging both to European and native regiments would have, in all probability, been greatly lessened. I fear that Government is very blind to its own interests. May its eyes be speedily opened!

I beg to remain,
Yours obediently,
"PHILOLETHES."

A CORRECTION.

To the Editor of the VETERINARY JOURNAL.

SIR,—The attention of my client, Mr. T. A. Dollar, has been called to statements appearing in the December number of THE VETERINARY JOURNAL page 431, relative to the case of Harris *v.* Jacobson, under the heading, "Horse Case—Difference of Opinion." The statements are both erroneous and unjustifiable, and are calculated to do great injury to the professional status of my client.

The clause of which Mr. Dollar complains especially is a follows:—"On his (*i.e.*, the plaintiff's) behalf was called Mr. T. A. Dollar, of New Bond Street, who described himself as Veterinary Surgeon to the Prince of Wales, but afterwards admitted that he was not a member of any college."

Mr. Dollar did not describe himself as Veterinary Surgeon to the Prince of Wales, but stated, as the fact was, that he had been employed by His Royal Highness for 16 years. Mr. Dollar did not represent himself to be a member of any college, but stated that he had obtained his certificate enabling him to practice as a veterinary surgeon from the Highland and Agricultural Society of Scotland in 1851, that for 17 years he had been an examiner on the Veterinary Board of the Society, and for the last 10 years had been President of the Practical Section of that Board, and had practised with success as a veterinary surgeon in London for the last 25 years.

The statements appearing in THE VETERINARY JOURNAL are so worded

as to affect Mr. Dollar most injuriously in his profession, and in the opinion of those who are not aware of his qualification.

On behalf of my client, I must request you to insert this letter in a conspicuous part of your next number, accompanied by a retractation of and an apology for the unfounded and libellous statement to which your report in THE VETERINARY JOURNAL has given publicity.

I have the honour to remain, Sir,

Your obedient servant,

LOVELL KEAYS.

26, Charles Street, St. James's Square, 10th December, 1878.

[The report of the law case above alluded to was forwarded to us for publication in the usual way, and we had no reason to suspect it to be incorrect. It appeared in other publications in exactly the same terms. If the statement made at the trial with regard to Mr, Dollar is erroneous, of course we regret that it should have appeared in THE VETERINARY JOURNAL, as nothing can be further from our intention or desire to publish that which is incorrect or unfair. We therefore willingly insert the amended report furnished by Mr. Keays.]

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—We have recently heard much of "Professional Unity," and of the happy future when Veterinarians will pull amicably together under one corporate body, which is to infuse courtesy and general goodwill.

Only recently an editorial in the JOURNAL set forth the benefits which are to arise from the Highland and Agricultural Society suspending their Veterinary Examinations; with one portal to the profession, the editor hopefully anticipates that there will henceforward be "no divided professional interests, no occasion for party jealousy or ill-feeling." But whilst thus enjoying brotherly amity and approving of the admission into our ranks of the graduates of the Highland and Agricultural Society, "A Horse Case," Harris *v.* Jacobson, is reported in such a manner that any one reading it, being a stranger to the profession, could only conclude that Mr. T. A. Dollar therein referred to was in no way connected with the Veterinary profession. I am fully aware that Mr. Dollar does not possess the Diploma of the Royal College of Veterinary Surgeons, and holds simply the certificate of the Highland Agricultural Society of Scotland, but to speak of so active and useful a professional brother in the manner it is inserted in the JOURNAL would stigmatise him as an empiric or imposter. No testimony of mine can add to Mr. Dollar's high professional capabilities and zeal in advancing the interests of his profession. I have written for further information regarding this case, which seems to indicate in our ranks something worse than "difference of opinion," which is given as the title of the case, and purpose bringing it under the notice of our Veterinary Medical Association, as a sad illustration of the need of "Professional Unity," and I might add, professional courtesy.

Yours very truly,

THOMAS TAYLOR, F.R.C.V.S.

Manchester, Dec. 13, 1871.

[Our readers will perceive that there is not the slightest necessity or foundation for Mr. Taylor's suppositions and insinuations. So far as we ourselves are concerned, we beg to assert most emphatically that his innuendoes and allusions are altogether undeserved and uncalled for. The "Horse Case" was published in this journal without the slightest intention of injuring or offending any one, and as we have said, it appeared nnother journals in the same terms. Mr. Dollar describes himself, on his signboard and elsewhere, as "Veterinary Surgeon to the Prince of Wales," and he would

perhaps be the first to deny that he was connected with the Royal College of Veterinary Surgeons. Knowing this, there was nothing in the statement to show that it might not have been inserted at Mr. Dollar's own desire, or with his cognizance. As we do not garble reports sent to us for publication, and as we could not see anything in this particular instance to excite suspicion as to its correctness, we only did as other editors had done. The profession is doubtless well aware, that for many years we have tried our utmost to promote unity and fraternity among its members, and that we have never for a moment allied or identified ourselves with those who exerted themselves to foster and perpetuate disunion and discord by breaking up our corporation into hostile and non-progressive sections—whether claiming to belong to a country or a school. We were the first to raise our voice against a Veterinary Charter for Scotland, and we have consistently opposed every movement having that object in view, from an unbiassed and conscientious conviction that it would injure Veterinary Science and yield no benefit to Scotland. This step we have never regretted. And we as strenuously and impartially opposed the obtainment of another charter which would have destroyed our Royal College, rendered all improvement perhaps impossible, and have left the profession at the mercy of the principal of a teaching school. The advent of THE VETERINARY JOURNAL was due to that attempt on the life of the Body Corporate, and the manner in which it was made. By the publication of the "Horse Case," we cannot discover that we have transgressed the bounds of propriety, given cause for offence, or in any way departed from the course indicated in the editorial on "Professional Unity." Our respect for Mr. Dollar precludes the necessity for alluding to his usefulness and other merits, which are too well known to need enumeration or amplification from us.

Surely the prospect of speedy professional unity is not repugnant to those few gentlemen who have afforded the Highland and Agricultural Society so much service, by assisting for so many years at the Veterinary Examining Board! We have reason to believe that the irritation that may be caused by the altered state of affairs will soon pass away, and that the advantages accruing to the many, will far more than counterbalance the temporary disturbance to the feelings and sentiments of two or three who would have perhaps preferred a disunited and paralysed profession to a strong and compact body.]

THE "FLEMING TESTIMONIAL FUND."

To the Editor of the VETERINARY JOURNAL.

SIR,—Being one of the members who attended the first committee meeting in Red Lion Square, for the purpose of starting the "Fleming Testimonial Fund," I feel exceedingly pained at the selfishness or apathy displayed by those whom one would have imagined should have been the first to come forward and recognise Mr. Fleming's worth in a tangible and generous form. Ten months have now elapsed since the inaugural meeting, and during that long period, from a body of professional men numbering more than 2,000, only a sum unworthy to be called an acknowledgment of our greatest veterinary author's talents has been collected. One can scarcely credit the fact that not 140 members have responded to the call out of our large body. It is almost a farce to present this miserable amount as a testimonial to one who surely has long ere this proved himself to deserve better of his professional brethren. I will not advocate his claims on the agricultural and medical professions, strong as they are. I allude simply to

ourselves. Can it really be supposed that only the small number who have contributed out of the entire body, abroad and at home, appreciate veterinary literature? Of all those who have passed from our midst, and those still present with us, not one can be mentioned who has ever done so much, and that so unselfishly, for the benefit of our profession and the animal world at large, as our staunch friend, Mr. Fleming. There are those, I know, who would gladly increase the amount of their subscriptions, rather than the sum should fall below what was anticipated. Surely the examination fee of one horse is not a ruinous amount to the poorest among us! We do not hesitate to befriend associations that protect our interests, and yet reluctance is displayed in tendering a few shillings as an acknowledgment of the good done to our cause through the high-class literature Mr. Fleming has conferred on us—literature which is acknowledged throughout the press as authoritative and unsurpassed, and which has supported the veterinary surgeon in more than one legal case. On account of my inability to attend the meetings which followed the preliminary one, I have written to the secretary suggesting that the fund should be kept open until after the spring examinations, when, perhaps, some of the "new blood" will show their appreciation of the knowledge derived from the perusal of Mr. Fleming's works. "Good that comes too late, is good as nothing."—Let those, therefore, who have hesitated, delay no longer, but present our mutual friend with the reward he has so richly earned.

Yours obediently,

J. WOODROFFE HILL, F.R.C.V.S.

Wolverhampton, *December 21st*, 1878.

THE TITLE OF VETERINARY SURGEON.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—The veterinary profession is more than deeply indebted to you for the position you have assumed in regard to its interests and requirements, and for the manly, honest, and independent spirit with which you have fought, and now fight, its battles for a higher and a more worthy position. Until THE VETERINARY JOURNAL was commenced, the profession had no voice, no publication to represent it honestly and adequately, and it was entirely in the hands of those who only too often proved they were not its friends. For the reform of abuses, the exposure of improper doings, the advancement of veterinary medicine, and everything belonging to the welfare and dignity of the profession, we now look to THE VETERINARY JOURNAL; and I am confident, from what has already transpired, that we do not look in vain.

These remarks have been elicited by your action with regard to the title of Veterinary Surgeon, which has been so praiseworthy and energetic, and must in the end lead to the realization of that protection which we and the public, as well as the domestic animals, so much need. In support of your most valuable and irresistible advocacy of our claims, I beg to forward you additional evidence of the injury we suffer, in reputation alone, by disreputable persons adopting our title. The first case happened some time ago, and appeared in *The Times* and other newspapers; the second case occurred only the other day. None of the so-designated veterinary surgeons were members of the profession—at least, I cannot find their names on the Register.

Yours most respectfully,

"VERBUM SAP."

ANSWERS TO CORRESPONDENTS.

BREAT WATSON.—Professor McKendrick has recently published two works on physiology, but nothing as yet on the physiology of the domestic animals. One of the books is very elementary, and published by Chambers, of Edinburgh; the other is a text-book for medical students, and is published in Glasgow. We have not heard whether it is the Professor's intention to go on with the work to which you refer.

A. McD.—Your letter is inadmissible to our pages, as it is not only too personal, and reflects, we think, unfairly on the gentleman you name, but it has no interest for us or anybody except the very few immediately concerned.

VIGILANS.—For admission to the army, apply to the Principal Veterinary Surgeon, 109, Victoria Street, Westminster, London.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from R. W. Murdoch, Leeds; G. Gray, Bakewell; B. Watson, Granton; J. W. Hill, Wolverhampton; Lovell Keays, London; J. Taylor, Manchester; "A Veterinary Surgeon;" R. H. Dyer, Limerick; "Verbum Sap"; J. Gerrard, Market Deeping; A. A. Queripel, Re-mount Depôt, Hapur, India; J. Rowe, London; D. Hutcheon, Liverpool; James Moore, London; A. B. Daniel, London; J. McFadyean, Edinburgh; W. H. Coates, London; Captain Russell, Grantham; J. S. Shivas, Invergordon.

BOOKS AND PAMPHLETS: The House Surgeon; or, the Doctor at Home; *C. P. Russel, M.D.;* Hydrophobia in Dogs and other Animals; *M. Dêle;* De la Thérmométrie dans la Pleuropneumonie Contagieuse du Gros Betail; *F. Enke;* Das Gesunde Pferd; *J. Samuelson;* the History of Drink; *E. Zorn,* Die Aussern Krankheiten der Landwirthschaftlichen Haussäugethiere.

JOURNALS, ETC.: *Journal of the National Agricultural Society of Victoria; Recueil de Médécin Vétérinaire; Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie; Archives Vétérinaire; Wochenschrift für Thierheilkunde; Repertorium der Thierheilkunde; Der Thierarst; Annales de Méd. Vétérinaire; Gazeta Medico-Veterinaria; Lancet; La Clinica Vétérinaria; Archive di Medicina Veterinaria; Journal de Médicin Veterinaire; Edinburgh Medical Journal; American Veterinary Review; Animal World; Practitioner; Chicago Live Stock Journal; British Medical Journal; Nature; Lancet.*

NEWSPAPERS: *Australasian Sketcher; Grantham Journal; Freeman's Journal; Scotsman; Lincolnshire Journal; Manchester Guardian; Lahore Civil and Military Gazette* (two copies).

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, VETERINARY JOURNAL, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

FEBRUARY, 1879.

ANTE-MORTEM CARDIAC AND PULMONARY THROMBOSIS, AS A RESULT OF ABSORPTION OF PUS.

BY PROFESSOR WALLEY, VETERINARY COLLEGE, EDINBURGH.

THE subject of this communication was a well-bred grey mare, five years old, and about fifteen hands high. She had been in the possession of the owner since May 22nd, and with the exception of a slight cold at the time of purchase, she had enjoyed good health.

On October 9th my attention was directed to the animal, on account of her having been lame several days. On examination I found a small serous abscess inside the knee, the result of "speedy cutting." Rest, with antiphlogistic treatment, in order to reduce the inflammation, was first resorted to. On the 18th, after determining the character of the contained fluid by means of the exploring needle, I lanced the abscess. The wound progressed very satisfactorily until the 28th, when I found the knee and arm much swollen, hot, tender, and stiff, with great lameness; the wound gaping and discharging a sanio-serous fluid. This condition of matters resulted from the mare bruising her leg, by getting it across a low wooden hay-rack during the night. Ordered hot fomentations and anodyne

refrigerant lotions to the leg; gave a dose of physic, and directed that the animal was to be kept on low diet, the head to be tied up, and the rack removed. On the 29th I found my orders had been neglected, and that the mare had again had her leg over the rack during the night, and had bruised it still more severely in endeavouring to withdraw it. The inflammatory symptoms were much aggravated, the leg being very tense and painful, the inflammation extending up the superficial brachial vein. There was little or no symptomatic fever or constitutional disturbance.

On November 3rd a healthy abscess was found in close proximity to the wound, which was lanced. The inflammation from this time spread rapidly up the fascia of the arm and superficial veins, and threatened to extend by the cephalic to the jugular; but it was arrested in that direction by the application of a blister. Up to November 19th scores of abscesses —superficial and deep-seated, large and small—formed all over the leg, from the fetlock upwards, and either discharged their contents naturally or were opened. After lancing, the wounds did not heal, but formed unhealthy hyperæmic ulcers, which discharged an ichorous fluid. The inflammation was greatly intensified about the 6th by the attendant, whilst inebriated, severely scalding the shoulder and arm with hot water, which caused portions of the hair to fall off and the skin to be thickened. About the 11th a swelling appeared in the sub-scapular and anterior pectoral regions—tense hard and very painful on manipulation. It rapidly increased in size, and on fluctuation commencing, was lanced, when upwards of a gallon of laudable pus escaped. On the night of the 19th I ordered the removal of the mare to the college infirmary. An open "float" being obtained for this purpose, she could not be induced by any means to enter it, and became very excited; but subsequently a covered vehicle being procured, she walked in without the least resistance. Up to this time the appetite was good and the bowels regular; there was but slight fever and very little wasting, the latter being principally noticed during the formation of the large abscess. There was, however, considerable atrophy of the shoulder muscles.

On the morning of the 20th, about 7 a.m., my colleague, Professor Baird, observed a considerable alteration in the patient. She was much distressed, breathing heavily, heart palpitating and she was evincing great pain. A stimulating anodyne draught was administered, followed shortly by another; but the distressing symptoms increased, and she died at 11 a.m.

Autopsy.—On removing the shoulder, I discovered numerous abscesses in the sub-scapular fascia, one, very large and deep, extending towards the chest. The muscles of the limb were completely disintegrated, the superficial veins were destroyed, and there was immense deposition of lymph in the connective tissue of the leg. The skin was almost an inch thick. I did not see the animal alive on the 20th, as I was from home; but on my return in the evening I was shown a specimen of her blood (taken from the jugular by Mr. A. Gray, jun.) under the microscope, it being literally laden with leucocytes or pus corpuscles.

From the symptoms, and also from the condition of the blood, I came to the conclusion that an abscess had burst, owing to the excitement arising from the fruitless endeavours to get the animal into the "float" the previous night, and that pus had obtained access to the circulation, producing *ante-mortem* pulmonary and cardiac clots. This opinion was verified in the autopsy carefully made by Mr. Gray, who had the heart and portions of the lungs conveyed to the college. The *ante-mortem* clot was perfect, and the pulmonary congestion extreme; pus was found in the cavity of the chest, but there was no signs of pleurisy. The spleen was very large.

During the progress of the case, every endeavour was made by my assistant, Mr. Reekie, and myself, to circumscribe and control the inflammation. In the early stages, belladonna, etc., were administered; subsequently, ferri et cupri, sulph. arsenic, potassic iodide, cinchona, and sulphide of calcium, alternately, and in proper combination. Malt liquors, as well as stimulating and nourishing food, were also allowed.

THE CUTANEOUS OR PUSTULAR EPIZOÖTIC AMONG HORSES IN ENGLAND.

BY A. B. DANIEL, M.R.C.V.S., LONDON.

THE prevalence of a cutaneous disease among horses in the metropolis and different parts of England having been discussed at recent meetings of the Central Veterinary Medical Society, I have been induced to make a few observations on it, as it appears to me to be worthy of notice. We have had a great many cases; at present a few, which are under observation. So far as past experience goes, I may give one or two facts. Last year we had it amongst our own horses, and then concluded that it was contagious. Our horses were then being fed on maize, although that, I believe, has nothing whatever to do with it. The disease occurs in animals frequently on other food. Many pairs of tram-horses have been affected singly, and have remained almost constantly in contact with others, but without the affected one inoculating his neighbour; although it is matter of daily experience to find the first appearance of the disease on parts of the skin touched by the harness or saddle. It has appeared in one horse of a stud of ten horses cleaned with the same utensils, the rugs being used indiscriminately, and yet it has not spread to the others. It runs a definite course, first appearing in little rounded lumps (little watery heads, I believe), which gradually enlarge into flat bullæ, always isolated, and most frequently occurring on the back, sides, and quarters. They gradually become flatter in the centre, and if broken at first exude clear lymph; later on this is more turbid, and finally forms pus. Scabs commence a few days after the appearance of the disease, looking as if stuck on; and are detached after a week or more, with little trouble or pain. There is never any appearance of itch, which is strong negative evidence of the absence of parasites. In the first week more pain is evinced on touching or trying to detach the scabs than at any other time, the animal flinching and never showing pleasure in being rubbed, from the beginning to the termination of the disease, as he does in Mange, etc. When the scab is removed, a bare patch is exposed, the hairs appearing through the pus on the under surface of the scab. Sometimes the scabs become confluent, and large bare patches are left. If roughly brushed or

combed in the early stages, a greater portion of the skin becomes implicated, and the inflammatory condition caused in this way, involving the deeper structures, a rather severe sloughing wound results. I have one in this condition at present. In the great majority of instances, little constitutional disturbance is observed. When present it manifests itself in a transitory dislike to food, never for more than a day, and increased thirst, for perhaps two or three days. When I first noticed the disease, I tried different remedies suggested by its varying phases; but I have latterly found that beyond a little nitre and a bran mash or two on the earliest appearance of the malady, nothing else is requisite. Every outward application I have tried has certainly aggravated the complaint. If left to heal under the scab, the recovery is surest and most rapid. The duration of the disease varies. I may mention that, in a few instances, I have seen a little constitutional disturbance prior to the appearance of the little raised lumps. Finally, I should say its diagnostic features are its apparently epizoötic character, and possibly the slight febrile condition primarily; its generally attacking young horses; the little scattered discrete lumps or vesicles which gradually enlarge into blebs, quickly becoming pustular, and the bleb having a depressed centre, the margin well-defined, rounded, and raised; the isolation of the spots and their uniform character, scattered generally over the trunk; the curious stuck-on-like appearance of the scabs; and the absence of itching.

ANTHRAX AND OTHER DISEASES AMONG ELEPHANTS IN BRITISH BURMAH.

BY R. F. FROST, M.R.C.V.S., ROYAL ARTILLERY, AND VETERINARY INSTRUCTOR, GOVERNMENT FARM, RANGOON.

[WE know but little of the maladies to which elephants are liable, notwithstanding their great value to the Indian Government, and their usefulness for transport and other purposes. That they suffer severely from certain diseases, and that the mortality among them is enormously high—especially in British Burmah—is amply demonstrated in the tables furnished by

Mr. Frost. We feel much interested in the diseases of the elephant, and no less in those of the camel—creatures upon which we rely for important services in our Indian empire—and information with regard to them is always most acceptable. Such information is not only of value to us as pathologists, but also to veterinary surgeons in India, and particularly those who have recently arrived in that country. The ravages caused by Anthrax among all animals in India are very startling, and should surely induce our Government to institute investigations into the etiology and prevention of this scourge, similar to those which have been carried on for some time by the Bavarian Government, which we have frequently referred to, and will do so again shortly. As it is, perhaps, the most destructive and dangerous malady that affects animals in every part of our immense empire, it would certainly well repay the expense of a searching enquiry. No individual has the means to prosecute such an investigation, nor would he be likely to obtain any recognition or encouragement if he undertook the task.

In the meantime, those veterinary surgeons who have the opportunity can render good service by publishing their observations, and we shall do all we can to aid them in elucidating the nature of such disorders.

With regard to the treatment of Anthrax in elephants, we would urge a trial of that already recommended for horses affected with Loodiana Fever. The local tumours should be treated as described in "Veterinary Sanitary Science and Police," Vol. ii., p. 190. Particular precautions should be observed by veterinary surgeons and attendants to protect themselves from infection.—Ed. *V. J.*]

I send enclosed herewith a few remarks on an outbreak of Anthrax Fever, which occurred among the elephants of the Commissariat Department at this station.

I regret that my other duties did not permit me to bestow as much time and attention on this outbreak as I could desire. The notes were hurriedly written for the information of F. F. Collins, Esq., Principal Veterinary Surgeon, Bengal Army, and it is at that gentleman's suggestion I send copies to you.

I am sorry I cannot, as suggested to me by Mr. Collins, send

you some of the blood for examination ; but should my attention be drawn to any similar cases in future, I shall take the liberty of sending to your address a specimen of that fluid. Among the enclosed papers you will find some showing the annual losses, and the supposed causes of deaths at the stations of Rangoon, Tounghoo, and Thayet-Myo from 1860 to 1878.

I also send the result of the analysis of the water.

Post mortem examination No. 1, of an elephant belonging to the Commissariat Department, Rangoon. Died at 4.30 p.m., 25th June, after an illness of two days.

1st. Body well nourished and muscles of a healthy hue.

2nd. On removing the right fore limb, my attention was at once drawn to the peculiar jelly-like deposit found in cases of Anthrax. This deposit existed to a considerable extent in the connective tissue of the pectoral muscles, and also between the scapula and costæ. In parts the deposit was of a yellowish white, and in others of a rosy hue.

3rd. Before commencing my examination of the body, and when conversing with Colonel Hawkes, ex-Commissariat Officer, I was told that among other symptoms exhibited by the animal was a small tumour in the region of the left parotid gland. I had the body turned over in order to examine the tumour, and on removing the skin covering the enlargement, a true Anthracoid Tumour presented itself. The same jelly-like exudate occupied a space of about eight by six inches.

4th. The blood in the veins was of a dark tarry consistence and colour, and in almost all the vessels coagulation had taken place.

5th. Only the normal quantity of fluid was present in the abdominal cavity. The peritoneum was healthy, but there was congestion of the mesentery. The spleen was of a dark colour, with considerable ecchymosis all over its surface. The same deposit just alluded to existed between the layers of fascia attaching the spleen to the stomach. On removing the former organ from the body, I found it weighed thirty-seven and a half pounds. The weight of the spleen of an ordinary-sized elephant is five pounds. On cutting into its structure and withdrawing the scalpel, the blade had adhering to it a thick layer of blood as

dark as ink, and this could be removed in large quantities by scraping the cut edges. The gland could be easily broken down by the pressure of the finger.

6th. On the under surface of the stomach, close to the pyloric orifice, was found another patch the size of a dinner plate, consisting of the same kind of deposit as I noticed in the tumour, In the sub-lumbar connective tissue I also found the same appearance. Above the penis, and close to the symphysis pubis, another large tumour was found.

The intestines, kidneys, &c., were healthy. There was a slight deposit in the substance of the lungs, which to a certain extent blocked up the bronchial tubes. A large quantity of frothy mucus was found in the trachea and larger bronchi, though there was no symptom of dyspnœa noticed before death.

7th. On laying open the pericardium, my attention was arrested by the large quantity of fluid which was contained in the sac. From a careful calculation, I came to the conclusion that it contained from thirty-five to forty ounces of serum, possessing more the colour of venous blood slightly diluted with water than real serum.

The external surface of the heart presented a peculiar appearance. Intensely dark ecchymosed spots studded its surface—some the size of a rupee, others that of an eight anna piece, and others still smaller. These were particularly numerous on the right auricle.

The horizontal and vertical grooves of the heart were filled with the peculiar jelly-like deposit.

Large coagula were in the right heart and pulmonary artery but none in the left. Although it is a remarkable fact that in Anthrax the blood is generally found in a fluid state, I did not find this to be the case in the present instance.

8th. There was no unpleasant odour from the body, although the autopsy did not take place until fifteen hours after death.

9th. A microscopical examination of the blood did not reveal anything peculiar in that fluid; but I must confess that I am not in a position to state that such may not be the case, as my instrument is not a good one, and my objectives are only inch and half-inch.

These are the leading *post mortem* appearances noticed by me, and I would now add a few remarks on the case.

This is the third elephant which has perished at this depôt within twelve days.

Case 1, died after a short illness. She was apparently in perfect health on the evening of June 14th, and died about 3 or 4 a.m. On the morning of the 15th I was asked to make a *post mortem* of the body, and to be present for that purpose at 5 p.m. Feeling the utter uselessness of attempting a satisfactory examination of such a huge carcase as that of an elephant in the space of an hour or an hour and a half, I did not attempt such a feat, but merely examined the viscera as they were removed from the body. In this case nothing attracted my attention except a large number of abscesses in the liver, which I thought sufficient to account for death.

Case No. 2, died on the 22nd, but as another engagement called me elsewhere, I was unable to attend the examination of the body. I am unable to state the result of the autopsy.

Case No. 3 is that alluded to under the heading "*Post mortem* No. 1." The following were the smyptoms detailed to me by the serjeant in charge of the animal :—

"The first symptoms of sickness were noticed on the morning of the 23rd inst. They commenced with lameness of the front and hind legs of the left side. During the day the elephant refused all food. (Col. Hawkes corrects this, and states it ate a little food.) No sleep at night. On the 24th, the left side appeared to improve by fomenting it with hot water and cow-dung mixed. Refused all food, and kept lying down and getting up at irregular intervals throughout the day and night. Slept very little, and ate no food. Administered a purgative through the medium of plantains and boiled rice, which slightly acted upon the system, the excrement being mixed with slime. On 25th the animal became worse. No sleep ; no food ; lying down and getting up till about 3.30 p.m. Appeared during the day to be in pain, which was evinced by the animal sitting on its haunches and biting its trunk ; made urine once yesterday, when at 4.30 p.m. it expired."

"P.S.—During the day a large swelling was found behind the left ear."

With the exception of the postscript, I do not think there is much value to be attached to the symptoms quoted. Col. Hawkes adds that the tumour formed very rapidly.

I wish here to enter into a matter which to many may not seem relevant to the case; but I nevertheless think it has a most important bearing in the matter. On the evening of the 25th Col. Hawkes asked me to make a *post mortem* at 7 a.m. the following morning, at which hour the committee was to assemble. I willingly consented to do so on one condition, namely, that I should be allowed my own time to complete the autopsy. In order to effect a careful examination, it is absolutely necessary to spend several hours over the task; and I am so far very pleased at having had an opportunity of bestowing the necessary amount of care on it. It has led to the discovery of many lesions which would have escaped my notice, had I been working against time.

The next important consideration is to endeavour to account for this fatal outbreak. Various forms of Anthrax Fever are very common in British Burmah. The soil is very retentive, and at the commencement of the monsoon vegetable decomposition is very active. The water is contaminated by every kind of filth, owing to the surface drainage finding its way into tanks.

The tank where the commissariat elephants usually drink and bathe, is situated close to the camp lines. About thirty elephants are washed in this tank daily. The excretions of the animals' bodies, fæces, urine, and perspiration, find their way into it. Several bullocks deposit their fæces and urine in it also, and lastly, but by no means the least source of contamination, is due to the natives, who are in the habit of washing in the tank if they can do so without being seen. I shall not now enter further into the subject of the water, as a small quantity of it has been forwarded for analysis. The forage of the elephants consists of rice in husk, and green fodder, consisting of fresh shoots of bamboo ebe. The animals are in very fine condition; indeed, Col. Hawkes considers they are, if anything, plethoric. I recommended the removal of the healthy elephants to another locality, and the administration of soda sulphite, but as this is not procurable in Rangoon, I was compelled to prescribe potassæ chlorate instead.

Post mortem, No. 2, of an elephant which died at 10 a.m., 29th June, 1878, after two days' illness. Body in good condition and examined seven hours after death.

Examination conducted under the most unfavourable circumstances. A steady downpour of rain continued all the afternoon, which materially interfered with the operation. So much was this the case, that I had to content myself with an indifferent autopsy. On each side of the penis,—which is about the region of the scrotum in other animals, I found two large tumours of the true Anthrax character; but with the exception of the intestinal mucous membrane, I did not, for the unfavourable reasons already stated, notice anything peculiar. The mucous membrane of the intestines was highly congested. The blood in the vessels was fluid, spleen 24lbs. in weight, the liver 61½lbs.

I saw the animal at 9.30 this morning, and examined the inguinal tumours. They were cold as ice, and on cutting into them no pain was evinced by the animal, nor did any discharge take place subsequent to the incisions being made. When I discovered the nature of the effusion, I had no doubt as to the result—which was death soon afterwards. The symptoms observed were not characteristic. The pulse was 68 per minute; pupils dilated to their fullest extent; breathing hurried; animal down and very uneasy. I had not my clinical thermometer with me, as my visit was accidental; but Col. Hawkes yesterday tried to take the temperature, though he was not successful.

The following were the symptoms detailed to me by the serjeant in charge of the Government Cattle:

"*Diary, Elephant 'Myazain,'* 27th June, 1878, 4 p.m.—Was observed to be limping when brought from shed to feeding place; ate rice and straw; no sleep during night, and ate very little; favoured hind leg (left) on account of pain.

28th.—A swelling between the two hind legs, on right of penis, was observed early this morning. On being taken out of the shed the animal drags the left hind leg. Ate charab freely from 9.30 to 10 a.m., passed urine of a whitish colour at 9.45 a.m., and appeared to have no pain in doing so. Passed about a glassful of a dark, watery excrement. At 11.30 a.m. passed, with slight difficulty, excrement of the usual description, denoting

food well digested. At 12.30 p.m., drank a few small buckets of well water and appeared refreshed. 2 p.m., lively and healthy-looking; eating charab; excrement of a healthy nature. 4.30 p.m., during this night no sleep, and the swelling at hind legs grew larger.

29th. — Between 8.30 and 9.0 a.m. — Animal becoming worse; the eyes changed from a bright appearance to a black colour; the tumour greatly enlarged since 6.0 a.m, and the creature weak, with a watery discharge from both eyes. At 9.10 a.m. it fell down in the shed, suffering from pain, and biting the trunk. Visited at this period by the veterinary surgeon, who took beat of pulse (68) and opened tumour. At 10.10 a.m. the elephant "Myazain" expired.

Since the animals were prevented from drinking at the tank in question the mortality has ceased.

Recently, the contents of the tank have been evacuated, but I regret to add only in an indifferent manner. The water has been removed by means of a syphon, but the sediment and filth of many years accumulation have been allowed to remain. Surely if the water was the medium of the contagium, it can scarcely be expected that the reservoir is now free from the germs of the disease! Every probable source of the malady should have been got rid of as far as possible.

I might add that the animals are picketed in open sheds erected on a hill, which allows of thorough and complete drainage.

ANALYSIS OF WATER FROM RANGOON.

		WELL.	TANK.	REMARKS.
Total Solids	Gun, per lb.	0·130	0·170	Both waters are soft and not unpleasant to taste. Both contain too much ammonia, free and albuminoid, to be recommended for use. Except for albuminoid ammonia, the tank water is the better of the two.
Volatile do.	„	0·050	0·015	
Sodium chloride	„	0·068	6·046	
Total Hardness	Gun, per lb.	5. 0	2° 0	
Permanent do.	„	3. 7	1° 5	
Free Ammonia	„	2·56	0·80	
Albuminoid do.	„	1·00	1·85	

BRITISH BURMAH DIVISION—TONGHOO.

ELEPHANTS—ANNUAL MORTALITY OF—FROM 1860 TO 1878.

MONTHS.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	
Strength	46	41	35	32	30	30	31	34	35	34	31	31	23	29	27	52	57	42	4	
January...	...	...	...	1	...	...	...	...	...	1	3	...	1	...	1	...	...	...	...	7
February	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	1	4
March	2	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	1	...	6
April	11	1	...	...	1	...	...	...	...	...	...	1	...	1	...	...	...	1	...	16
May	15	...	...	1	...	1	...	3	...	...	2	1	...	...	...	...	...	5	...	28
June	3	...	1	...	1	...	...	...	...	...	...	3	...	...	...	...	1	4	...	13
July	1	...	...	1	...	...	1	...	...	...	1	...	...	...	2	1	...	...	...	7
August	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
September	...	...	...	...	...	...	...	...	...	2	3	1	...	...	...	1	...	...	...	7
October	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2
November	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	3	1	1	...	7
December	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	1	...	...	...	4
Total ...	32	1	1	3	2	2	2	3	1	6	9	7	5	2	3	7	2	13	1	102

TONGHOO.

ELEPHANTS. REPUTED CAUSES OF DEATHS—1860 TO 1878.

DISEASES.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
Lung diseases	25	...	1	...	...	...	1	...	...	2	5	5	...	1	2	...	...	1	...
Heart diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liver diseases	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...
Lung and Heart diseases ...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lung and Liver diseases ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bowel diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...
Brain diseases ... ... }	...	...	...	...	1	...	...	...	1	4	1	...	1	1	1	...	...	...	1
Sunstroke ... ... }	1	...	...	...	1	...	...	...	...	...	2	1	2	...	...	...	...	5	...
Natural causes	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	1	...	2	...
Dropsy, "Zahartahd" ...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Debility	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Anthrax (Jolay)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Entozoa (internal parasites)	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	1	1	...
Accidental	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unrecorded...	...	...	...	...	...	1	...	3	...	...	...	...	1	...	...	...	...	1	...
Total	32	1	1	3	2	2	2	3	1	6	9	7	5	2	3	7	2	13	1

BRITISH BURMAH DIVISION—RANGOON.

ELEPHANTS—ANNUAL MORTALITY OF—FROM 1860 TO 1878.

	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	Total
Strength	30	30	30	30	30	21	19	25	14	16	28		29	27	30	23	25	29	27	
January...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	4
February	1	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	4
March	7	1	...	...	...	...	1	...	2	...	...	...	...	...	1	...	...	...	...	12
April	8	2	...	...	...	1	...	...	1	...	1	...	...	...	2	...	...	...	...	15
May	...	...	...	2	1	2	1	1	...	...	...	...	2	...	1	...	...	...	...	10
June	...	4	1	...	...	...	2	5	1	...	1	...	...	1	...	...	...	...	4	19
July	2	...	...	...	...	...	...	1	1	1	1	...	...	...	4	1	...	...	1	12
August...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	1	...	...	5
September	...	...	...	...	...	4	...	...	1	...	...	...	...	...	...	...	1	2	...	8
October	...	...	1	...	1	...	...	...	1	1	1	...	...	1	...	1	...	1	...	8
November	...	1	...	...	1	1	1	...	...	1	...	...	...	...	...	...	1	...	...	6
December	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Animal Total	19	8	3	4	3	9	6	7	7	3	5		2	4	8	4	3	4	5	

RANGOON.

ELEPHANTS. REPUTED CAUSES OF DEATH—1860 TO 1878.

DISEASES.	1860.*	1861.*	1862.*	1863.*	1864.*	1865.*	1866.*	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	
Lung diseases								6	1	...	...	...	...	...	1	2	...	2	1	13
Heart diseases								...	...	...	...	...	...	...	...	...	...	1	...	1
Liver diseases								...	...	1	...	...	1	...	1	1	1	...	1	6
Lung and heart diseases ...								...	...	...	...	...	...	...	...	...	...	...	...	...
Lung and liver diseases ...								...	...	...	...	...	...	...	...	1	...	...	...	1
Bowel diseases								...	2	...	1	...	...	...	...	...	1	1	...	5
Brain diseases ... ... }								1	1	2	1	...	1	2	5	...	...	...	2	15
Sunstroke ... ... }								...	...	...	...	...	...	...	...	...	...	...	...	...
Natural causes								...	...	...	...	...	...	...	...	...	...	...	...	...
Dropsy								...	2	...	1	...	...	1	1	...	...	...	...	5
Debility								...	...	...	1	...	...	...	...	...	...	...	...	1
Anthrax (Jolay)								...	...	...	1	...	...	...	...	...	...	...	3	4
Entozoa (internal parasites)								...	1	...	...	...	...	...	...	...	...	...	...	1
Accidental								...	...	...	...	...	...	...	...	...	1	...	...	1
Unrecorded								...	...	...	...	...	...	...	...	...	...	...	...	...
Total	19	8	3	4	3	9	6	7	7	3	5		2	3	8	4	3	4	7	

* Causes of death for these years recorded inaccurately.

BRITISH BURMAH DIVISION—THAYETMYO.

ELEPHANTS—ANNUAL MORTALITY OF—FROM 1860 TO 1878.

MONTHS.	1860.*	1861.*	1862.*	1863.*	1864.*	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
Strength †																			
January...						...	...	...	...	...	1	1	...	...	1	...	...	...	...
February						...	...	...	...	1	1	...	...	...	...	...	...	...	...
March						...	1	...	...	1	2	1	...	1	1	...	...	...	...
April						...	...	1	1	1	1	...	...	1	...	...	...	...	...
May						...	...	3	...	1	...	...	...	1	...	...	...	1	2
June						...	...	...	2	...	...	...	...	...	...	...	1	1	1
July						...	...	...	1	...	...	...	...	...	...	...	...	...	...
August						...	...	1	...	...	...	...	...	...	...	...	...	...	...
September						...	...	...	...	...	...	...	...	...	...	...	...	...	...
October						...	...	...	...	...	1	...	...	...	...	...	1	...	...
November						...	...	1	...	...	...	...	...	...	...	...	1	...	...
December						1	...	...	...	...	...	...	...	...	...	...	1	...	...
Total						1	1	6	4	4	6	2		3	2		4	2	3

* No records for these years.

† Unknown. About 30, I presume. R. F. F.

THAYETMYO.

ELEPHANTS—REPUTED CAUSES OF DEATH—1860 TO 1878.

DISEASES.	1860.*	1861.*	1862.*	1863.*	1864.*	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
Lung diseases						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Heart diseases						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liver disease						...	...	...	1	...	...	...	...	...	...	...	...	...	...
Lung and Heart diseases ...						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lung and Liver diseases ...						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bowel diseases						...	1	...	...	...	...	1	...	...	...	...	2	...	...
Brain diseases ... ...)						...	...	2	1	1	3	1	...	...	...	...	...	...	2
Sunstroke ... ...)						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Natural causes						...	...	3	2	1	...	...	...	...	...	...	1	1	1
Dropsy (Zaharbated)						1	...	...	...	2	1	...	...	1	1	...	1	...	...
Debility						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax (Jolay)						...	...	...	...	...	...	...	...	...	...	...	...	...	...
Entozoa (internal parasites)						...	...	...	...	...	...	...	...	...	...	...	...	1	...
Accidental						...	...	1	...	...	...	...	...	...	...	...	...	...	...
Unrecorded						...	...	...	...	...	2	...	...	2	1	...	...	...	...
Total						1	1	6	4	4	6	2		3	2		4	2	3

* No records for these years.

OBSTINATE SKIN DISEASE IN THE HORSE.

BY A. E. QUERIPEL, M.R.C.V.S., R.A. RESERVE REMOUNT DEPOT, HAPUR, INDIA.

To add to the many valuable remarks offered by the contributors to the VETERINARY JOURNAL on the subject of the above-mentioned disease, contained in the issue for October, 1878, is almost, I fear, to be superfluous; but as in that number Mr. Walker invites opinions from members of the profession who may be luxuriating in these sunny climes, and as a great number of these cases have been under my care during the past two years, I think it but right to lay before your readers a short description of this disease as it is seen in India.

First, with reference to its nature. I have always looked upon it as a severe type of Prurigo, and certainly nothing can better describe the disease than the words contained in Mr. Percivall's Hippopathology, in which he speaks of it as "a sort of cutaneous furor to which horses pampered and little worked are liable, and which appears constitutional in its origin." Both in the Punjab and North-west provinces, this disease is very prevalent, and is one that causes great trouble amongst the troop horses during the summer months, owing to its severity and the chronic nature which it assumes. Climatic influence exercises great power on it, and one peculiar feature is that during the past two years all the cases which have been brought to my notice have been, with one exception, amongst our "Walers;" and in tracing the history of this exception, I find that the colt in question, although returned as a stud-bred or country-born, had "Waler" blood on the dam's side. This, then, would, I think, point to the fact that removal from the temperate climate of Australia to the fiery heat of the plains of India, must be looked upon as an exciting cause. That it is non-contagious, I have frequently proved. Horses thus affected have been standing for lengthened periods in close contact with others, and no sign of the disease could be traced on those that were healthy in the first instance. It is, however, constitutional, and assumes a very chronic form; in fact, in a battery or regiment one can safely foretell which horses will be affected during the hot weather. These horses

are generally perfectly free from the disease from October until March or April, but as soon as the cold weather has passed, it is sure to re-appear. Whether it is hereditary or not, I cannot say. I have tried to trace back the medical history of the colt's dam of which I before spoke, but have been unable to find it.

The symptoms are exactly those described in the October number of the Journal. The most prominent, of course, is the excessive irritation of the skin; and, in fact, so bad is this in many instances, that unless carefully guarded the patient will rub or bite the affected parts until they are perfectly raw; and although generally the horses in the very best condition are attacked, still such an amount of constitutional disturbance does the perpetual itchiness cause, that in a short time the animal is noticed to have fallen away greatly in flesh. The parts usually affected are the head, neck, shoulders, and lower part of the abdomen. At first a papular eruption is noticed, but after a little time the skin becomes thickened and corrugated. Microscopical examinations of the skin have frequently been made, but have always failed to detect parasites of any kind; though as mentioned by Mr. Macgillivray, I am informed that in a few instances spots of some fungus have been discovered. This, however, is unusual.

With reference to treatment, I fear I can offer no remarks of any value. The pharmacy has been searched, and every medicine tried both internally and externally; yet each has successively failed in those cases which have assumed the chronic form. Mr. Walker's advice has reached us rather late to enable it to be tried this year; as I am glad to say we see but few, if any, cases in the cold weather. By reference, however, to the records of this depôt, I find that my predecessor adopted this mode of treatment, but with no better results, I think, than that met with from other preparations. I shall, however, give paraffin oil a fair trial when next an opportunity offers, and I trust I shall be equally fortunate. Any remedy which could be relied on would be invaluable in this country. Partial success has been obtained by the use of an oil derived from the hill fir. My treatment during the past hot season has been rather palliative than curative. I have had the patients frequently dressed with

a weak solution of acetic acid, which has tended greatly to reduce the irritation of the skin, thus avoiding in the most severe cases those troublesome wounds which occasionally arise from the horse rubbing himself; the milder cases have also, in most instances, yielded to this treatment. I have found benefit also to be derived from the administration of an occasional mild aloetic purge.

Editorial.

THE SWINE PLAGUE.

One of the most notable events in the recent history of Veterinary Sanitary Science in this country, is the recognition and adoption of legislative measures for the suppression of another of the contagious diseases which have for so many years proved harassing, and even ruinous, to agriculturists and stock-raisers. By adding Swine Plague to the other maladies which it has determined to control, the Veterinary Department of the Privy Council has shown that it is becoming alive to the necessity for extending its influence and its powers in the mitigation or extinction of those serious animal plagues which it had hitherto overlooked or ignored. We hope it may be moved to include some other maladies which are also preventable, and no less serious.

But we may well express surprise that in venturing beyond its previous stereotyped list of maladies, it should have blundered in giving this pig scourge the erroneous and dangerously misleading designation of Typhoid Fever—a designation which, in the earlier numbers of the Veterinary Journal, has been condemned as incorrect and inapplicable. The recent and most careful researches of such excellent comparative pathologists as Professors Klein, Osler, Burdon, Sanderson, and Murchison have established the fact that the disease is not Typhoid Fever.

The Privy Council Order has attracted some attention in the public press, and Dr. Vacher, Medical Officer of Health for Birkenhead, has pointed out in *The Times* of December 26th that the words "Soldier disease, or red disease"—names by which this contagion is likewise designated in the Order—may interfere with its satisfactory working; as these names are given to any affection in swine, accompanied by general or partial redness of the skin, and in true Pig Typhoid this may be, and often is, quite absent. This letter to *The Times* was followed by another on December 31st, on the same subject, which is here reproduced, and is sufficiently explanatory of the position we have assumed with regard to this disorder. We also refer our readers to what we have already published from time to time with regard to the pathology,

prevention, and destructiveness of the disease—destructiveness which is almost daily experienced in different parts of the country.

To the Editor of THE TIMES.

SIR,—Dr. Vacher has done good service in calling attention, in *The Times* of to-day, to the serious mistake made in the Privy Council Order with regard to what is therein designated "typhoid fever of swine (otherwise called soldier disease, or red disease)." For red soldier, soldier disease, and red disease are names popularly given to every morbid or deranged condition of the pig, in which there is more or less redness of the skin. Thus, in Anthrax Fever, Measles or *Rubeola*, Erysipelas, and a number of skin diseases, as well as in Asphyxia and Heat Apoplexy, we have this discolouration, and the above designations are generally applied to them indiscriminately, as if they were all one malady and the cutaneous tint was its characteristic symptom.

So that under this Order of Council pigs suffering from any of the affections or conditions just named will, in all likelihood, be condemned as the subjects of Typhoid Fever, and this may occasion great and quite unnecessary inconvenience, hardship, and loss. Besides, as Dr. Vacher correctly points out, all pigs not "red soldiers" will be adjudged innocent of Typhoid. In the latter malady, it is well-known to veterinary pathologists that redness of the skin is far from being a constant symptom. Its absence, therefore, would not warrant any one asserting that a pig was free from the disease.

But another very grave error perpetrated in the Order, and not alluded to by your correspondent, is that with reference to the name given to the malady in question. Well-informed comparative pathologists are cognizant of the fact that the disease is not Typhoid Fever, and that, pathologically and clinically, it entirely differs from that affection in the human species, the only resemblance between them being the presence of ulcers in the intestine of man and the pig. To give the disease this name is not only a mistake, pathologically speaking, but it is perpetuating an error which is eminently misleading to sanitarians and others, and may do much in maintaining and extending the scourge itself. The Typhoid Fever of mankind and this porcine plague are as different in their modes of propagation or transmission, as they are in their anatomy and pathology. The human disease is neither infectious nor contagious in the ordinary acceptation of these terms, whereas the swine fever is extremely so. Indeed, its virulence and powers of infection are as marked as in the Cattle Plague. Association with an infected pig for only a few minutes will transmit the virus to a herd, and that herd, driven to a fair, may infect all the swine in a county.

It is somewhat strange that the Veterinary Department of the Privy Council should have lent itself to the continuance of such a serious mistake in adopting a misleading and technical name for the disorder, seeing that in one of the recent reports of the Medical Officer of the Council there is a most excellent paper on the subject from the pen of Dr. Klein, F.R.S., in which this error is exposed, and seeing, also, that the Council had already wisely abstained from committing itself in this direction in dealing with the few contagious diseases of animals included in its lists, giving them only such popular names as serve to specify them—Cattle Plague, Foot-and-mouth Disease, Glanders, etc.

A far better and safer name for the affection than that given to it in this instance by the Privy Council is "Swine" Plague, for it is as distinctly a disease peculiar to the pig as Glanders is to solipeds, Cattle Plague or Rinderpest to the bovine species, or Typhoid Fever to our own species. A plague it undoubtedly is, for it is the most terribly destructive disorder to which pigs are liable; and if allowed to spread unchecked, there is reason to

believe it would lead to the almost total extinction of these useful animals. It has for years caused heavy losses in this country; but these appear to be trifling when compared with those sustained by the United States of America, where its ravages annually are something appalling.

By the way, I am not aware that any precautions are adopted with regard to the introduction of this most fatal and destructive disease from the United States, which now send large numbers of pigs to us. Owing to the absence of veterinary sanitary measures in America, Swine Plague ("hog cholera" or "intestinal fever" it is termed there) prevails widely and unchecked. So that this country, in its unrestricted and unguarded dealings with the United States, is exposed to importation of the contagious diseases prevalent there, and especially to this Swine Plague, as well as the Contagious Pleuro-pneumonia of cattle—a pest becoming well-known to the Americans. Would it not be advisable for the Privy Council, in correcting the mistake with respect to the designation of the pig disease, to consider in time whether this and the lung plague are not worthy of some attention at those ports of ours which admit animals from the other side of the Atlantic? Perhaps, also, if the United States Government received a hint that we were exposed to considerable risk in our animal traffic with it, and that if this traffic is to continue as if it were an uninfected country it should adopt measures to free itself from infection, we might be spared much trouble and loss, and the trade which is so advantageous to it at present would stand a chance of remaining as unimpeded as it now is. I beg to remain, yours respectfully,

GEORGE FLEMING, F.R.C.V.S.,

December 26th. *Editor of the Veterinary Journal.*

"FLEMING TESTIMONIAL FUND."

AT the Committee meeting held at the Royal College of Veterinary Surgeons, on Friday evening, January 17th, 1879, Robert Ward, Esq., in the chair, it was resolved—

1. That, agreeably to the request of Mr. Fleming, the testimonial take the form of a handsome chime hall-clock, surmounted with a group of animals, at a cost of fifty to seventy guineas, and that Messrs. Batt, Duguid, and the Secretary be instructed to select and purchase.

2. That a neatly-illuminated scroll be designed by the engraver to the College, to contain text and origin of the testimonial, and the names of all subscribers.

3. That the presentation of the above, together with a purse, take place at the annual dinner in May next.

"Fortior est qui se, quam qui fortissima moenica vincit."—*Ovid.*

The duties of the Hon. Sec. being now near their close, it is sincerely to be hoped that the apparent misunderstanding existing between the Medical Associations' testimonial agents and the Committee should cease; for there cannot be ground for complaint. Indeed, if there be ground, it must be taken by the Hon. Sec. and Hon. Treasurer—for gentlemen allowed their names to be placed on the Committee, and it was understood "to assist the movement," attend the meetings and render assistance or advice; notices were issued, and summonses also, but the members of committee made themselves conspicuous by their absence. In fact, on one occasion only one attended, viz., Mr. J. R. Cox, and at some inconvenience. Thus, with only the two officials, nothing was done. With such visible apathy one can judge the feelings of the Hon Sec. and Treasurer, having the success or failure of the movement thrust upon them.

However, be all this as it may, the business has now advanced to near its completion, and our eyes should be directed to the one object in view, viz., a suitable expression of a rising profession to a brother who has, for no other object than true professional love, and earnest desire to place our craft in high esteem—in its true and legitimate position as an important science to our commonwealth—laboured for years as an author, alone, and in true simplicity. Then, let us set aside all party differences at once and for ever, go hand in hand, and on the first Monday in May present a testimonial worthy of the man. That the scroll may hold the name of every *good member* of our craft is the earnest wish of

ROBERT WARD, F.R.C.V.S.,
Treasurer (*pro formâ*).

London, January 20th, 1879.

P.S.—I have no wish to be the responsible holder of the fund, now that banks are alarming us, or before even ; but it would be far more becoming if those gentlemen who have collected, would kindly give in the statement of amount in hand, either to me or the hon. secretary (the amount received by the Secretary amounts now to £235 2s. 6d, which, it is expected, will be augmented by subscriptions promised), they will greatly oblige.

THE ROYAL BUCKHOUNDS AND RABIES.

IN last month's issue we mentioned that Rabies had appeared among the Royal Buckhounds, and that the meets had consequently been discontinued. The disease was pronounced to be the dreaded malady by, we believe, more than one member of the profession, though a certain medical gentleman (of no experience, however) ventured to designate it "Kennel Fever." If the diagnosis of the veterinary surgeons was correct, then, of course, the most careful sanitary and prophylactic measures must have been recommended ; and, doubtless, confinement to the kennels, or their immediate neighbourhood would be insisted upon until all danger had passed away. Considering the very uncertain latency of the malady in the dog—extending, as it does, from a few days to twelve months, the period during which precautions should be observed ought certainly not to be less than the maximum of the incubation period, and particularly if there was reason to believe that any of the hounds had been inoculated. In any case, provided always that the disease *was* Rabies, it was not to be expected that the hounds would be hunted again this year, and that the most scrupulous watch would be kept over them until the "meets" commenced next season. It was, therefore, with a feeling of the utmost astonishment that we observed the announcement of their having been again hunted, and that but for the frost they would have been regularly out. Surely this is tempting Providence with a vengeance ! Should the infection linger among the pack—as well it may, for three months have not yet elapsed since the disease showed itself—then not only may the excitement of the chase bring it into active operation, and so lead to further loss among the hounds, but other animals and people may become infected should they get in the track of a hound which suddenly develops Rabies when after the stag. We earnestly hope that no member of the profession has recommended or sanctioned such a hazardous experiment. If he has, then blame will assuredly fall heavy on him should any mishap occur.

"HORSE-SICKNESS," AND OTHER DISEASES OF ANIMALS IN SOUTH AFRICA.

A FEW months ago, we alluded at some length to the formidable disease among horses in South Africa known as "Horse-sickness," and we expressed surprise that no scientific inquiry had been made into its nature. Through the kindness of the Principal Veterinary Surgeon to the Army, we have been favoured with copies of two reports: one from Mr. Wiltshire, colonial veterinary surgeon at Natal, and the other from Mr. Glover, veterinary surgeon in the Royal Artillery. We publish both; and it will he noticed that Mr. Wiltshire's is especially valuable, from the fact that in the blood he appears to have invariably found the *Bacillus anthracis*, a discovery which, if real, at once removes doubts as to the nature of the malady. We have all along suspected it to be Anthrax, but for lack of better evidence hesitated in giving a definite opinion. We expect to receive some inoculated aqueous humour soon, and then we shall be in a position to corroborate Mr. Wiltshire's opinion. The following is that gentleman's report:—

"Horse-sickness is an enzöotic affection supposed to be peculiar to South Africa; but I am informed that a disease very similar to it, in its symptoms and the rapidity with which it kills, affects horses in a district of India called Loodiana, and that it is there attributed to a peculiar kind of grass. I am endeavouring to obtain the fullest information on the subject, so as to compare notes of the two diseases to see if they are identical, but especially with reference to the cause assigned to each. "Horse-sickness" is a malignant disease, usually exceedingly rapid in its course, and terminating fatally in a few hours, but sometimes extending over two or three days. Occasionally an animal recovers; it is, however, subject to a second, and even a third attack, either of which may cause its death. This affection is not peculiar to the horse, as it also attacks the mule, quagga, &c. A gentleman also informed me that he had shot "Wildebeestes" seen to be suffering from sickness, in which the lungs were found to present the same appearances as those of a horse which has died from Horse-sickness. It occurs in summer, and all danger is supposed to be over when hoar-frost appears.

I have heard, however, that cases occasionally happen in the winter at the coast, generally when there is more rain than usual; and this year, after a summer remarkably free from it, it commenced in that district about the middle of April, and extended into the third week in May, a period unusually late for it. This disease manifests itself in different forms, viz.: the "Dikkop," "Black-tongue," and "Throat-sickness," characterized by external tumours, besides the most common form without any local swellings. All, however, are identical, I believe, in the condition of the blood, and in the lungs and intestines being more or less affected. In whatever form it appears, it often begins very suddenly, either during or after exercise; at other times the horse is dull and does not feed well for some days before any urgent symptoms are manifest, perhaps slight colicky pains. If, however, a clinical thermometer is used, the temperature is found to have risen to 102° or upwards. As a rule, the first thing noticed is the accelerated breathing and other symptoms indicative of inflammation of the lungs—such as redness of the mucous membranes of the eyes, swelling over the eyes, quick pulse, cough, coldness of the extremities, scanty urine, &c. On listening to the lungs, the sounds vary according to the progress the disease has made; in some instances they are not much altered, while in others there is an entire absence of sound except in the large tubes, which are found filled with yellow frothy mucus, giving rise to a bubbling sound at every inspiration and expiration. In some instances this mucus is discharged in immense quantities from the nostrils at each expiration, in others there is

no discharge. The whole of these symptoms are not always present nor of the same severity, (scarcely two cases being exactly alike) ; the temperature, however, is always high, usually from 105° to 108° Fahrenheit. In the varieties termed Dikkip, Black-tongue, and Throat-sickness, the head and other parts indicated by these terms swell up to a considerable size and interfere with the breathing.

Post-mortem appearances.—If the horse has been dead a few hours the body is found to be distended with fœtid gas, and there is generally a quantity of frothy mucus round the nostrils.

Abdomen.—On cutting into the abdomen, dark lines and patches are noticed on the intestines ; the mesenteric glands are tumefied and very dark in colour ; liver and kidneys gorged with blood ; spleen dark in colour, and sometimes enlarged ; the blood is dark in colour and coagulates imperfectly ; on examining it with a microscope, in all cases where I have been enabled to do so, I have invariably found bacteria present.

Chest.—This cavity often contains a quantity of straw-coloured fluid on both sides. The lungs are found to be intensely gorged and very heavy, and along the edges and in patches a large quantity of yellow lymph is deposited beneath the pleural covering ; on cutting into them blood and serum flows freely from the cut surfaces, as well as yellow frothy mucus from the tubes ; the intertubular space is filled with fluid. The pericardium contains a quantity of straw-coloured fluid also. The heart I have sometimes found soft and flabby, and it usually contains small clots remarkably soft ; in the left side there are invariably black patches (ecchymosis) beneath the lining membrane, more or less extensive. In the form termed Throat-sickness, there is great swelling of the throat between the jaws, involving the larynx, &c. I have not seen this form myself, but I am told that upon cutting into it the parts are very black. In those cases where the lungs are only slightly affected, and there are no external swellings, death appears to result from the intensity of the fever.

Contagion and Infection.—This disease is not considered contagious nor infectious. Whether it can be produced by inoculation I have not yet been able to determine.

Incubation.—The period of incubation is not known. I have no doubt that it is often very short, but there is reason to believe that in some instances it is in the system for some time before showing any outward symptoms, only waiting for conditions favourable for its development.

Causes.—The causes giving rise to this disease are very obscure ; the opinion of the Dutch and that of the colonists generally is that it is due to miasma, and that it is contained in the dew, so that if a horse is not turned out to graze till the dew is off the grass, and brought in before it falls in the evening, he is safe. This practice is very good, but, as a matter of fact, it does not prevent the disease ; besides which, many die from Horse-sickness that are stabled and not allowed to graze, but fed on grass cut for them. On the other hand I can hear of no well-authenticated case of Horse-sickness occurring in a horse fed exclusively on dry food, such as forage, mealies, &c., no matter how bad the situation of the stable nor how deadly the season for it. In all cases that have occurred in horses kept, as a rule, under these conditions—where I have been able to obtain reliable information—I have invariably found that they have either been allowed to graze on some occasion when out, or have had grass given to them in the stable ; generally when they have been away from home or forage was not obtainable. The places most favourable for it are valleys and low-lying lands, but it also occurs on land at an elevation of several thousand feet above the level of the sea. In some of the most elevated districts of the colony, I understand that it has either never been known, or only in exceptionably bad seasons.

Predisposing Causes.—Among the predisposing causes of this disease are change of climate, a plethoric condition from good feeding without sufficient exercise and the proper regulation of diet; a hot and moist atmosphere favours its development, because it is depressing, the textures of the body are relaxed, the circulation is languid, and the skin as well as the lungs and other organs are less active in the performance of their several functions, so that respiration, digestion, and other vital phenomena, as well as the formative and eliminative processes, are impaired, and serious results follow. The bad sanitary arrangements to which horses are subject in this country, as well as the sudden changes of temperature, and fatigue from severe or prolonged exertion, are also predisposing causes. After carefully considering the matter, I am led to believe that miasma is not the cause of the disease, but that the poison is contained in the grass. In support of this, I may state that as the late summer was an unusually dry one, and "sleys" became dry instead of being saturated or covered with water as usual, consequently they were in a more favourable condition to throw off malarious exhalations than usual, the effect of which was seen in the increase of fever among human beings; and yet the season was remarkably free from Horse-sickness until we had rain. It seems to me, therefore, that heat and moisture are essential for the production or development of the agent which gives rise to this disease. What the precise nature of that agent is, is still a matter for investigation; but I think it is probably due to parasite fungi infesting the weeds and grasses in the same way as smut, rust, and other cryptogams affect forage and other grain. Animals have been known to become affected with diseases allied to this after eating food on which cryptogamic plants were found, and Colic often occurs after the ingestion of mouldy forage and other food affected with such parasitic plants; while colicky pains are often among the first visible symptoms of an attack of Horse-sickness.

Nature.—A consideration of the conditions known to be most favourable for its development, the causes assigned, the symptoms observed during life, and also the post-mortem appearances, together with the constant presence of bacteria in the blood—in every case where I have had an opportunity of examining it—enables me to identify it as one of a group of septic diseases termed Anthrax. Horse-sickness, then, is Anthrax Fever resulting from the action of a poisonous agent ingested in the food, impairing its vitality, and inducing a general morbid state of the system, with congestive inflammation of the lungs, and in some instances external tumours.

Treatment.—In the treatment of a disease so sudden in its development and fatal in its results, anything like a sperific is out of the question, and it too often happens that remedial measures, however prompt and skilfully applied, fail to produce any benefit. It must be borne in mind that there are grave changes in the blood, as well as an engorgement of both lungs and other organs to contend with, and also a high degree of fever; the treatment, therefore, should be such as will tend to counteract these several conditions. In the majority of cases the symptoms are not noticed till the disease is too far advanced for treatment to be of any benefit; when, however, they are noticed in a comparatively early stage, I would recommend the administration of 20 drops of tincture of aconite, to be followed as quickly as possible by a ball composed of

Powdered digitalis	1 dram.
Tartar emetic	1 „
Calomel.....	1 „
Camphor	1 „
Chlorate of nitre of potass.	2 „

with sufficient mass to make a moderate-sized ball; this may be repeated in

four hours, and about 10 or 15 drops of aconite may be administered every hour in the interval. Instead of blistering the sides with enphorbia, as is too often done, it would be better to dip rugs or blankets in hot water and apply them to the chest, or if a counter-irritant be applied, let it be mustard, it will be as efficacious as the other, and less likely to be injurious. Clothing may be put on so as to induce perspiration, and to relieve the lungs, and help to eliminate the poison ; and half an ounce of chlorate of nitre of potass. put in water for the horse to drink. Bleeding should not be had recourse to unless the breathing is very difficult ; in most cases that I have seen of this disease it has not been admissible, and it is often carried too far, so that if a horse does not die at once he is prostrated as to lessen the chances of his recovery later on.

When it is necessary to bleed, the amount to be taken should be in proportion of about 1lb. of blood to every 100lbs. of the horse's weight, unless the pulse begins to falter, in which case it should be stopped at once.

In those cases in which the bowels are constipated, oil should be given in preference to more active agents. Horses should be placed in a comfortable loose box, if possible, but as the stables are generally bad, they would often be better under the shade of trees or buildings when it does not rain. During the acute stages of the disease, horses are seldom inclined to eat ; but whenever they will, the diet should consist of bran or linseed mashes, roots, lucerne, sugar-cane, &c. If recovery takes place, forage and other good food should be given as well, in moderation ; and this, with the best nursing that circumstances will admit of, and the administration of tonics along with the food, will be essential.

In suggesting the above treatment, which, in my very limited experience of this disease I have found most beneficial, I am not prepared to guarantee its efficacy in any case.

Since I have been enabled to determine the nature of this affection I have not had an opportunity of testing the value of other medicinal agents ; but in the future I intend trying the effect of antiseptics, such as the sulphite or hyposulphite of soda, carbolic acid, &c.

Preventive measures.—The most certain way of preventing Horse-sickness, in my opinion, is to keep horses stabled, and feed them entirely on dry food, such as good forage, mealies, bran, &c. I consider it unsafe to give freshly-cut grass during the season for sickness. Of course, on farms where horses are bred, such a system is impracticable, and at present I can suggest no remedy ; but these remarks apply to horses in daily use in the towns and coast districts particularly. More attention should be paid to sanitary arrangements, the stables as a rule being too small, ill-made, and badly-ventilated, and, in many instances, reeking with filth ; and yet pure air and cleanliness are as essential for the maintenance of health in horses as in mankind. The diet should be carefully regulated so as to avoid the ill-effects of bad feeding, which are to be seen every day in disorders of the liver, colic, and other things too numerous to mention, all of which render horses more susceptible to diseases. In the detection of this and other diseases the use of the clinical thermometer will be found most valuable, as it is an unerring guide in the earliest stage, when outward symptoms are not to be relied on, and it gives time to adopt treatment which in many cases is successful.

Mr. GLOVER'S report, though dealing with " Horse-sickness," also mentions other maladies which are likely to attack the animals accompanying an Army Corps in South Africa. He writes :—

In the event of an advance of troops on the Zulu frontier, or a campaign in Zulu-Land, the diseases I consider most likely to produce havoc to any serious extent among the animals are four in number, viz., " Horse-sickness " and " Glanders," affecting horses and mules, " Lung-sickness " and " Red

water" affecting cattle. The sickly season in Natal is stated to commence in November and last until April; this period, however, particularly applies to Horse-sickness and Red-water, Lung-sickness and Glanders occurring throughout the year, and being little influenced in their severity by the seasons. Horse-sickness or Anthrax Fever, as is well-known, produces great mortality in this colony and the Transvaal, and having had some experience with a similar disease (Loodiana Fever) in India, I cannot hold out much hope of the mortality being to any considerable extent reduced. As regards the districts which suffer most, I believe those of Weenan, Ladysmith, and the country along the river Zugela stand first, and next the low-lying land on the coast. Utrecht and the country surrounding it is also very fatal; and I have heard of one valley but a short distance from Utrecht, in which it is almost certain death for any horse pastured in it during the month of December.

As far as I can ascertain, the districts most free from the disease are Weston, Grey, Zoure, and the country between the Biggarsberg and Newcastle. The greatest mortality occurs in low-lying districts, the high "Feldt" being comparatively free from the very virulent forms. The disease generally makes its appearance towards the end of November or beginning of December, the period varying to a great extent with the weather, early rains causing it to break out sooner than it otherwise might, and a dry summer is generally attended by the disease in a mild form. I cannot learn in what district it, as a rule, first shows itself, but I was informed lately by a very good authority that the Lower Zugela country is pretty safe up to January. As regards the Luneburg district I am unable to obtain sufficiently reliable information, but the possibility is that a similar prevalency exists there as at Utrecht and its district. The disease is said to be very fatal in Zulu-Land, even more so than in Natal, but as to the parts most liable to it I can acquire no information. Glanders is at all times more or less prevalent in Natal, and the probability of serious outbreaks occurring in the proposed campaign depends to a very great extent on the hardships the animals have to encounter, low condition and poverty being favourable to the production of "Spontaneous Glanders," the disease when once appearing being infectious and contagious. Lung-sickness or Epizoötic Pleuro-pneumonia is a highly infectious and contagious disease, producing great mortality, peculiar to particular districts, but met with all over the colony. The greatest mortality occurs on the principal routes of travel, a fact accounted for by healthy animals being brought more under the direct influence of infection and contagion. Up to the present time, this year, compared with others, has been very free from the disease, and as far as I can ascertain no outbreak of any consequence at present exists in the colony. The disease, I am told, is equally prevalent in Zulu-Land, instances having occurred of whole spans succumbing to its virulency, but I can gather no information as regards the extent to which it exists there at present. Red-water is a blood disease chiefly affecting the digestive organs. It is more rife and virulent at the beginning of the summer after the first week's rain, when the young grass has sprung up, and is met with in most parts of Natal, the greatest mortality occurring along the principal highways. The disease is prevalent between November and April, very wet summers being especially noted for its virulency. The road between Hawick and Colenso is considered the most deadly district for it in the colony, and that between Pietermaritzburg and Newcastle, *viâ* Greytown, correspondingly free from it. The country along the Zugela river, and what is known as "The Thorn Country," also suffers considerably, but it is a general opinion that up-country cattle have a certain immunity from the disease in these districts until very late in the summer. It is also met with about Utrecht and in Zulu-Land, but as far as I can gather the mortality

in these places is not so great as in most parts of Natal. The healthy season for animals in this part of South Africa is between April and November; still, should another season of drought occur, the probability is that the losses in stock, even during the healthy months next year, will almost equal the mortality of a bad sick season. In gathering information regarding the diseases and their localities peculiar to this part of South Africa, the greatest difficulty I have to contend with is the diversity of opinion as regards the prevalency of certain diseases in certain districts; one authority stating emphatically that such-and-such diseases are found in their worst forms in such-and-such districts, another perhaps informing me of quite an opposite state of things.

GLANDERS AND FARCY IN INDIA.

CONTAGIOUS diseases among animals in India must soon receive the attention of the Government of that country, as they appear to be spreading, and are of more frequent occurrence every year. Veterinary sanitary science has evidently received but little attention, notwithstanding all that the veterinary authorities in India have done in the way of investigating and reporting. That science has barely received recognition in this country—indeed, it is all but ignored—but that cannot be a reason for neglecting its teachings, warnings and advice in India, which is comparatively poor, and cannot sustain the terrible losses caused by preventable diseases, and so complacently borne in these islands. Glanders, at one time but little known in Hindustan, has of late years been assuming alarming proportions, and no measures seem to have been adopted to limit its extension. From the latest issue of the *Lahore Civil and Military Gazette* we glean the following, which is the most recent notice of the prevalence of this insiduous and deadly equine scourge:—

"Glanders and farcy have appeared to a serious extent in several military stations in Upper India, at Umballa, Sialkot, Rawal Pindi and Peshawur. An outbreak of glanders occurred a short time ago amongst the horses of the R.H.A. battery at Mian Mir, but it has not spread amongst other horses. So long as veterinary sanitary questions are neglected in India, and grass-cutters, ekka and dâk gharry owners are permitted to drive infected animals with impunity, glanders and farcy will show themselves, and it may be in an epidemic form amongst our cavalry and artillery horses. When the loss in the latter becomes a 'financial consideration,' something remedial will perhaps be proposed."

In our next issue we hope to publish an interesting communication on this disease, from the able pen of our colleague, Mr. Queripel, of the Hapur Remount Depot, India.

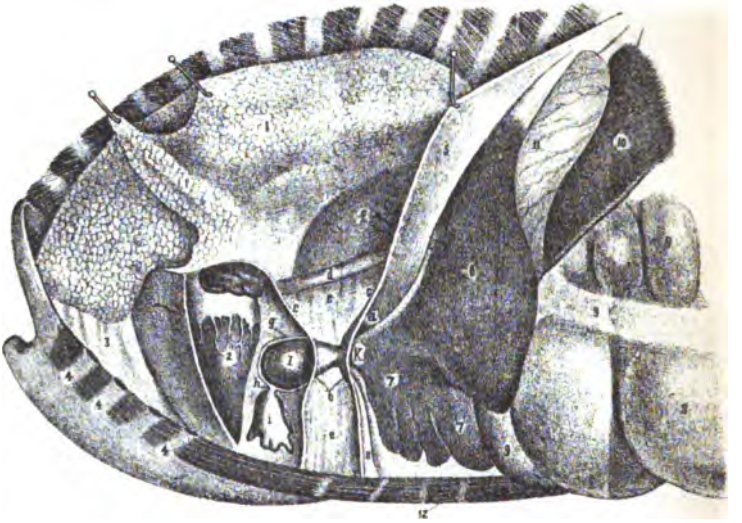
THE MILK OF DISEASED COWS.

THE following request to the members of the profession, for assistance in the important investigations alluded to, needs no explanation. We earnestly hope that those of our colleagues who have the opportunity, will do their best to aid Mr. Blyth in his self-imposed task—the results of which will be advantageous to the veterinary as well as to the medical profession:—

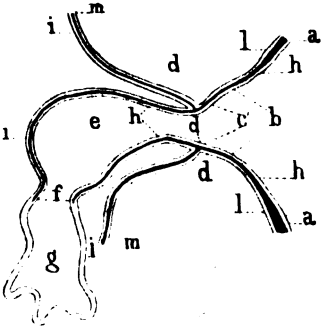
Barnstable, N. Devon, November 17th, 1878.

DEAR SIR,—I have recently been making a number of determinations of the urea, caseine, albumin, lacto-proteine, nitrates and nitrites, to be found in healthy milk. I now wish to study, quantitatively, the same matters in disease. I write therefore to you, to ask if you could give me any assistance

F.1 *Plate 6*



F.2.



Pericardial Hernia of the Liver

in this investigation. What I want is, of course, samples of milk from cows either suffering from any general well-recognised disease, or any local disease of the mammæ. I can do with so small a quantity as 2 ozs., which could be sent by post. I would undertake, in return, to give you an abstract of the research for your Journal; but if I could get a continuous supply of samples, I should not be in a hurry to publish the results, until, at all events, the more common diseased milks had been fully investigated.

Your time is no doubt much taken up. I can only hope that you may set some of your numerous veterinary friends to work. The subject is of real importance; it is, in fact, a formal attempt to find a purely chemical method of distinguishing milk drawn from a healthy and milk from an unhealthy animal.

I am, yours truly,

A. WYNTER BLYTH, M.R.C.S., F.C.S., &c.,
Analyst for Devon.

ON THE PRESENCE OF A HEPATIC LOBE IN THE PERICARDIAL SAC.

HERNIA of some one or other of the abdominal organs into the thoracic cavity, due to traumatic influence, is not uncommon in animals, and particularly the horse, and is consequent, of course, on rupture of the diaphragm. A remarkable instance of this kind was recently published in this journal by Mr. Woods, of Wigan. Cases of apparently congenital hernia of abdominal viscera into the cavity of the chest are less frequently recorded, and we therefore feel ourselves justified in drawing attention to a rather extraordinary instance of congenital misplacement (Dystopia) of a portion of the liver, recorded by Professor Gaddi Gaetano, in the *Gazzetta Medico-Veterinaria* of Milan.

The subject of this report was a female ass, aged twelve years, which did not during life, it seems, exhibit any indications of the strange anomaly afterwards discovered in its biliary and circulatory apparatus. It was destroyed at the Bologna University, in order that its carcase might be utilized for the lectures on veterinary topographical anatomy. On opening the abdomen, it was found that a portion of the median lobe of the liver was lodged in a fissure in the diaphragm, and passing through that muscular septum this lobe protruded into the thoracic cavity. Leaving the liver and diaphragm intact, Gaddi removed the left side of the chest in order to examine more carefully this unusual hernia. This enabled him to fully ascertain the position of the misplaced lobe, and to obtain a good sketch of the relative situation of the viscera.

For the better comprehension of the transposition of the hepatic lobe, Gaddi gives a brief description of the liver—though, in doing so, he makes the mistake which every veterinary anatomist has made with regard to the Spigelian lobe:—a mistake pointed out by Professor Flower. Gaddi notes that the middle lobe is divided into four lobules or secondary lobes—a right and two middle of equal size, and a left usually larger than these. He justly mentioned that this disposition of the liver varies in the horse, and more especially in the asinine species, the middle lobe sometimes being divided into a larger number of lobules of different forms.

The annexed plate (fig. 1) represents the cavity of the thorax opened on the left side, with some of the thoracic and abdominal viscera removed, to exhibit the anomaly more distinctly. The left lung (1) is raised, and the heart (2), with the pericardium opened vertically, is shown; there are also exhibited the anterior mediastinum (3), the prolonging cartilages of the true

ribs divided transversely (4), the diaphragm (5) slightly carried forward, the left lobe of the liver (6), with the corresponding suspensory ligament turned back, the middle lobe of the liver (7), with its secondary lobules, the right lobe (7'), the falciform ligament (8), the two diaphragmatic and sternal curves of the colon (9) folded back, the spleen (10), with the spleno-gastric and reno-splenic ligaments, the great curvature of the stomach (11), and a portion of the rectus muscle of the abdomen (12).

The index finger was carefully introduced into the diaphragmatic opening (*a*), alongside the hepatic lobule; the opening was situated a little to the right of the phrenic centre, and corresponded to the anterior face of the middle lobe of the liver; it led to a tolerably wide canal passing into the thoracic cavity, and traversing the space between the anterior aspect of the diaphragm and the posterior face of the pericardium (*c*), in the cavity of which it terminated in a *cul de sac*: thus establishing a free communication between the abdominal and the pericardial cavity. The diaphragmatic aperture was situated about eleven centimeters from the scrutiform cartilage, and had a somewhat oval shape; the canal was directed from above downwards, and measured six centimeters in length; transversely, it measured four centimeters. The lateral borders appeared to be formed by a collection of various tendinous fasciculi from the phrenic centre of the diaphragm, while the upper and lower borders were composed of small fibrous fasciculi disposed in a semi-lunar manner to complete the diaphragmatic aperture. Elsewhere the walls of the canal appeared to be formed of the two serous layers of the diaphragm—the peritoneal and pleural. The canal itself, at first wide, became constricted about three centimeters from the diaphragm, then was again dilated until it entered the pericardial cavity, where it terminated in a wide elongated infundibulum, in which lay the hepatic lobule. The canal measured six centimeters in length from the diaphragm to the pericardium, and in passing through the thoracic cavity deviated slightly to the left side; the distance of the canal from the triangular muscle of the sternum was about five centimeters, and from the vena cava (*d*) twenty-two millimeters. It was maintained in position, above and below, by the ligament of the posterior vena cava (*e e*), constituted by the pleural layers. The middle lobe of the lung, which is normally situated to the left of the posterior vena cava and the said ligament, was not deviated towards the right lung, but remained separated from it by the usual wide space. The inferior portion of the posterior mediastinum was lacerated in various places, and similar lacerations were noticed on the diaphragm and external face of the pericardium. Opening towards the left was a kind of pyriform bursa (*g*), depressed from right to left; this contained the hepatic lobule, and projected as much as three centimeters into the pericardial cavity. In the superior extremity of the bursa was the canal communicating with the pericardium; the inferior extremity, which seemed to terminate in a *cul de sac*, presented a marked constriction (*h*), with a very narrow opening, which suddenly dilated and gave rise to a wide diverticulum (*i*) of the bursa, containing a small quantity of the usual peritoneal serum. This diverticulum also terminated in a *cul de sac*.

In order to show more distinctly the nature of this anomaly, and to enhance its scientific value, Gaetano gives a diagram or plan of the anatomical disposition of the parts. This plan (fig. 2) gives a longitudinal section of the canal communicating with the abdominal and pericardial cavity, omitting the diaphragm and pericardium. At *a a* are only those parts of the diaphragm which constitute at *b* a portion of the communicating canal, and terminate at the constriction *c'*; this canal is continued to the other part constituted by the pericardium.

The portion of the canal formed at the expense of the diaphragm was very

thin, and about three centimeters long. The intermediate part of the canal was constituted by the diaphragmatic serous membrane—the pleural external, peritoneal internal, lying together back to back. The second portion of the canal, measuring also about three centimeters, began at the constriction (*c'*) and terminated in front of the pericardium. The canal really commenced at the inner circumference of the constriction (*c'*), the true sac (*e*) containing the hepatic lobe being insinuated into the pericardial cavity. The thinner part of the canal (*f*) and its diverticulum (*g*) observed at the extremity of the sac, were constituted by some fibres from the pericardium, but more especially by the two layers of serous membrane.

At the letters *h h h* is the diaphragmatic peritoneal serous membrane lining the canal, sac, and diverticulum ; while the internal serous membrane of the pericardium (*i i i*) covers the inner portion of the pericardial canal as far as the constriction (*c'*), becoming reflected to form the sac externally. The diaphragmatic pleura (*l l*) is carried downwards to cover the exterior of the communicating canal, and continued forward to form the pericardial pleura (*m m*). At the sides the pleura covering the canal passes upward and downward (*e e*, fig. 1) to become reflected on the posterior vena cava (*d*, fig. 1), constituting the ligament of that vessel, and thus forming two pleural layers, containing, as has been said, the communicating canal.

The shape of the contained hepatic lobule corresponded to the canal and sac, being drawn into a long narrow portion or neck, and terminating in an expanding mass (*l*, fig. 1). It presented a kind of fibrous ligament, formed by the adhesion of the peritoneal lining and Glisson's capsule, and it was surmised that this union had led to the lobule being carried forward. There was nothing abnormal observed in the structure of the tissue of the lobule, and, notwithstanding the constriction in the canal, there was ample room for the passage of its vessels and nerves. Indeed, the finger could be readily passed from the abdominal face of the diaphragm to the *cul de sac* in the pericardium, alongside the lobule.

Gaetano alludes to a similar displacement of the hepatic lobule in a dog, the report of which was published in vol. ii. (second series) of the *Memorie dell' Academia delle Scienze dell' Institutio di Bologna* for 1863. After discussing the origin of the anomaly with regard to congenital or adventitious development, Gaetano is of opinion that the hernia was congenital.

NEW MEMBERS OF THE PROFESSION.

AT a meeting of the Court of Examiners of the Royal College of Veterinary Surgeons, held January 6th, the following students of the Royal Veterinary College were admitted members of the profession :—

Mr. James Richard Carter, junr.	...	... Litcham, Norfolk.
„ George Crane Hunting...	...	... Halvergate, ditto.
„ Frederic Thurston Hart	...	... London.
„ Samuel Oxton Langley	...	... Birkenhead, Cheshire.

The following students of that College passed their "Second Examination," at a meeting of the Court of Examiners, on January 7th :—

Mr. Wm. John Payton Tibbats.	Mr. Wm. Henry Beach.
„ Frank Taylor.	„ Frederic Gowland Rugg.
„ John Henry Riches.	„ Nicholson Almond.
„ Wm. John Malvern.	„ Henry Augustus Rumboll.

The following students of the same College passed their "First Examination," at the meetings of the Court of Examiners, held January 8th and 9th :—

Mr. David Evans.
„ Henry Porter Gilbert.
„ Alfred John Down.
„ Charles Samuel Hunting.
„ Edward Charles Wisken.
„ Ernest Emelius Bennett.
Mr. Edward Arthur Hollingham.
„ Edward Langford.
„ Frank Wm. Sharp.
„ Charles Albert Harriss.
„ Arthur John Blake.
„ Arthur Rogerson.
Mr. Stephen Edward Holmans.

At a meeting of the Scottish Section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh, on January 15th, the following students passed their "Final Examination," and received the diploma of the Royal College of Veterinary Surgeons :—

EDINBURGH VETERINARY COLLEGE.

Mr. Edmund Day ... ... Michaelgate, York.
„ George Humphries ... ... Manchester.
„ Joseph Oswald Martin ... ... Manchester.

EDINBURGH NEW VETERINARY COLLEGE.

Mr. Edward Curtis Howard ... ... Thatcham, Berks.
„ George Alfred Browne ... ... Coleraine, Londonderry.

GLASGOW VETERINARY COLLEGE.

Mr. John Robert Webster ... ... Garrybritt, Wexford.
„ John Barry... ... ... Fulfane, Kilkenny.
„ William Clay ... ... Stockport, Manchester.

THE FITZWYGRAM PRIZE COMPETITION.

THE competition for the prizes given by Major-General Sir F. Fitzwygram, Bart., will take place on or about Tuesday, April 29th, 1879. The terms of the competition will be nearly the same as in previous years. The competition will be limited to gentlemen who have taken their diploma since the Easter examination of 1878.

Further particulars can be obtained on application to the Secretary of the Royal College of Veterinary Surgeons, 10, Red Lion Square, W.C.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 15TH, 1879.

Present—The President in the chair; Professors Brown, Williams, Pritchard; Messrs. Balls, Batt, Blakeway, Cartwright, Collins, Cuthbert, Dray, Greaves, Freeman, Harpley, Moon, Taylor. and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

The SECRETARY announced that the following letters had been received: —(1) From Professor McCall; Messrs. Broad, Cox, Proctor, Morgan, and Reynolds, regretting their inability to attend the meeting.

(2) From the Pharmaceutical Society and the College of Physicians, acknowledging with thanks the receipt of a copy of the register.

The SECRETARY stated that a copy of the work revised by Mr. Mayer on the "Anatomical Outlines of the Horse," by Macbride, and a pamphlet by Dr. Voelcker on "The Influence of Chemical Discoveries on the Progress of English Agriculture" had been presented to the library of the College.

On the motion of Mr. DRAY, seconded by Mr. TAYLOR, a vote of thanks was awarded to the donors for their presentations.

(3) Letters from Mr. Case and Mr. Gerrard wishing to be informed whether they were liable for duty on armorial bearings, if they used the College arms.

The SECRETARY stated that a reply had been sent in the affirmative.

(4) A letter from Mr. ROSE enclosing an advertisement from the *Wellington Journal*, Salop, in which a Mr. C. E. Onslow, innkeeper, styled himself veterinary surgeon in practice since 1845, and stated that he was well acquainted with anatomy and surgery according to the rules laid down by the Veterinary College, and that he was a cattle disease inspector by appointment. The writer wished to know how Mr. Onslow, not being a qualified veterinary surgeon, could be so appointed.

The PRESIDENT explained that as the Act of Parliament at present stood, there was no remedy for such cases.

PROFESSOR BROWN further stated that the Act provided that men could be appointed with no qualification other than that they had been previously so employed; and so long as the present Act remained in force they had no power to object to the appointment of persons who were not Members of the Royal College of Veterinary Surgeons. To a more stringent rule there was this objection, that if the local authorities in future objected to it they might apply for some other order; and if they did he did not know how the Privy Council was to escape. If the local authority said, "We have no men qualified under your order; we have only such and such within our reach," then the Privy Council would be bound to appoint such men. So far as the matter now stood, the arrangement was as satisfactory as it could be made. It would be much better if the original definition had been adhered to, but then the difficulty would have had to be faced that there were a large number of local authorities who were simply incapable of appointing members of the Royal College, because they were not to be found in their respective districts. He had examined the list and found that there were fifty local authorities authorised to appoint local inspectors, in whose districts there was no resident veterinary surgeon. There was indeed one county in Scotland where there was no resident member. Under those circumstances it was not an unreasonable request that something should be done to relieve them of a difficulty which was otherwise insurmountable. He should like to add that the local authorities had appointed veterinary inspectors from the members of the College to a very large extent. In some counties they had appointed every member they could find, and thus saved all the travelling expenses which otherwise would have been incurred.

The matter then dropped.

The SECRETARY read a letter from the Hon. Secretary of the Central Veterinary Medical Society thanking the Council for the use of the Board-room, and asking for the continuance of the same.

The application was granted.

The SECRETARY stated that a letter had been received from Dr. Favé, who had been for five years with a veterinary surgeon in France; who held a diploma, and was a licentiate of the French College of Physicians, and who wished to become a candidate for the diploma next session. His diploma for M.D. was lodged with Mr. Powys, of London.

The SECRETARY was instructed to write to the effect that no exception could be made to the ordinary rule, as laid down in the bye-laws.

A letter was also received from Mr. F. C. Clark, Birmingham, enclosing one from the secretary of the Royal Veterinary College.

The PRESIDENT explained the circumstances of the case. It was a good many years since Mr. Clark came up. He studied for one or two sessions, and he now wished to know whether he could pass under the old rules; but as these rules would cease in July, of course he could not come up for examination after that date.

Letters were received from Messrs. Edwards, Wycherley, Davies, and Ashe, rejected candidates, wishing to be informed whether there would be an examination at Christmas.

The SECRETARY stated they were informed that there would be an examination.

A letter was received from Mr. F. T. Murray, of Tralee, county Kerry, in which he stated that he wished to come up for his first examination in April next, and that he ought to be allowed to read at home and attend a "grinder," as in the medical profession.

A letter was received from Dr. Dunsmure, dated 16th December, stating that there were a limited number of candidates (eight) for the "pass examination" and one or two for the minor, and that there would be some difficulty in arranging the Board without incurring great expense.

The President, in a letter, replied that, so far as justice was done and a fair Court assembled, and there was a good examination, the Council would leave the pecuniary arrangement in Dr. Dunsmure's hands.

The SECRETARY read the following letter which had been received from Professor Walley:—

"VETERINARY COLLEGE, CLYDE STREET,
EDINBURGH, *Dec.* 19*th*, 1878.

To the Secretary of
The Royal College of Veterinary Surgeons.

"SIR,—I beg to bring before the notice of the Council what I consider a hardship, under certain circumstances, to students, in connection with rules 32, 33.

"At present a student is required to study three terms before presenting himself for the first examination, and two other terms before he is eligible for the second examination, *i.e.*, presuming that he has passed his first. Now, if from any cause the student is prevented from going up for his first after the expiry of three terms, or in the case of his having been rejected after the expiration of one; his course at College is much prolonged and a considerable addition is made to his College expenses. There are at present six students (two of whom were rejected in July last) in this College eligible for the first examination in January next, but owing to the fact that there are none from the other Scotch schools they cannot present themselves until April, thus throwing them back three months, and that from no fault of their own; and if they pass in April they will not be eligible for the second examination until January, 1880.

"I submit for the consideration of the Council the following proposition:—

"That if from any unavoidable cause a student is prevented from presenting himself for any examination in the usual course, he shall be allowed to go up for the next examination after studying one term less than the rule at present prescribes.

"Thus, in the case of the six students referred to above, supposing that they pass the first examination in April next, they will have to wait, as I have before remarked, until January, 1880, before they are eligible for the

second ; but if my suggestion were adopted they would be able to present themselves for the second examination in July 1879.

"I shall be obliged by your bringing this matter before the Council at the earliest opportunity.

(Signed) "THOMAS WALLEY."

The PRESIDENT said that the proper course for Professor Walley to adopt was to give notice to the Council that he intended to move the rescinding of the laws in question.

Examinations.

At a meeting of the Court of Examiners for "the pass examination," held on January 6th, 1879, 4 students passed and 8 were rejected.

At a meeting for the second examination, held on January 7th, 8 passed, and 1 was rejected.

At a meeting held on January 8th, 1879, for "the first examination," 9 passed and 3 were rejected.

At a meeting on the 9th of January, 4 passed their "first examination" and 3 were rejected.

The PRESIDENT said he had put a notice on the paper about the instructions to examiners. At present no definite instructions had been given to them. The conventional rule was that five "Good" entitled the candidate to "very great credit," and four "Good" and one "Moderate" to "great credit"; while five "Sufficients" enabled him to pass. His feeling was that where "Sufficient" was taken, which really meant "Sufficient" and no more than "Sufficient," that therefore one mark below "Sufficient" should reject a candidate unless on one or more other subjects he had got a "Good." It would run in this way:—Four "Sufficients" and one "Indifferent" *reject;* three "Sufficients," one "Good," and one "Indifferent," *pass.* Surely the meaning of "Sufficient" was that it was no more than sufficient. Any mark that went below that, unless it was qualified by some higher mark on some other subject, ought to reject. They were all in favour of having more strict examinations every year, and he thought the Council should give instructions that anything less than five "Sufficients" should reject a man, unless qualified by a higher mark.

PROFESSOR WILLIAMS said he agreed with the President, but at the same time he saw a difficulty. A man might make two or three "Good" marks, and some "Sufficient," and would be marked "Bad," and how to deal with such a case was a matter of some difficulty. Suppose a man had one "Good," or one "Very good," a "Bad" mark would neutralise the "Very good" and bring it down to "Sufficient;" therefore he saw some difficulty in the matter.

The PRESIDENT.—You mean, not that you see any difficulty in what I suggest, but that it should be carried somewhat further.

PROFESSOR WILLIAMS.—Yes

PROFESSOR BROWN said it occurred to him that there would always be a difficulty in giving the examiners instructions for their guidance. If what the President suggested could be carried out, there would be no difficulty about it; but if they went beyond that there would be no end of difficulty.

Mr. COLLINS suggested that so many marks should be given in each class and each division, so that a certain gross number would not let him fall below a certain number on any particular subject.

Mr. GREAVES said it always appeared to him that different subjects should be valued at different rates.

PROFESSOR WILLIAMS suggested the appointment of a committee to investigate the matter, and if this were done, it would meet his proposal for the suspension of bye-law 31, and the new bye-law 46.

The PRESIDENT said he should be glad to assent to the appointment of a

committee to arrange for the marks and the words to be used, and for the value of the different portions of the examination.

PROFESSOR WILLIAMS said there was also another thing to be taken into consideration, namely, the finance. He had recently had a conversation with Professor Turner, and he (Professor Williams) stated that justice would be done to the examiners and the College by giving them so much per hour. By this plan the financial difficulty in which the College had been placed would be overcome. If the matter were left to a committee a very satisfactory arrangement might be come to.

After some further remarks,

The PRESIDENT moved the appointment of a committee "To regulate the marks to be assigned to the different subjects of examination, the marks which are to pass or to reject candidates, and the payments to be made to the examiners; also to consider any arrangements which can be made to suit candidates for examination."

PROFESSOR WILLIAMS seconded the motion which was carried.

The members of the Committee appointed were, The President, Professor Turner, of Edinburgh, Professor Williams, Professor Brown, Professor Pritchard, and Mr. Collins.

The Obituary notice was read.

The REGISTRAR reported that 100 Registers had been sold since their last issue, and eight Registrar's fees had been received.

The SECRETARY then read the Examiners' Report of the Examination of Candidates for the Royal Agricultural Society's Prizes, which Examination took place on January 7th, 1879.

The report was ordered to be forwarded to the Secretary of the Royal Agricultural Society.

To the President and Council of the Royal College of Veterinary Surgeons.

The Examiners appointed to test the qualifications of the Students competing for the prizes offered by the Royal Agricultural Society of England, for proficiency in the pathology of Cattle, Sheep, and Pigs, beg to present their report, and in doing so wish at the same time to express their regret that the number of Candidates should be so limited; but they do not attribute this to indifference on the matter so much as to the qualifications insisted upon to render them eligible being perhaps too stringent, as it has come to the knowledge of the Examiners that several others that did not quite reach that standard have expressed disappointment at not being allowed to compete. They also think that the period after the completion of their studies, instead of being limited to fifteen months, might be, without injury, extended to two years.

Another circumstance, the Examiners also hope that the lengthened period of study at the schools, which has not yet come into action, and the improved education thereby given, may increase the number of competitors in future years.

Out of the Students who had complied with the existing requirements, one had left this country for the United States, and of the others, at the last moment, only one presented himself before the Examiners.

The result of this examination has, however, fully equalled any previous one. Appended to this report is a copy of the questions that were propounded in the practical, oral, and written examinations.

The maximum number of marks was set at 1500, and the number reached by Mr. John Herbert Callow was 1230, which, in the opinion of your Examiners, fully entitles him to the First prize.

We have the honour to remain, your obedient servants,

(Signed) ROBERT L. HUNT,
THOS. WALTON MAYER,
D. GRESSWELL.

January 7th, 1879.

Mr. HARPLEY thought that some little revision of the qualifications for members of the College who came up for examination might be made. Some of the students who were likely to practise in the country, no doubt spent a great deal of energy and time in acquiring the knowledge compatible with the practice of diseases of cattle, with the hope that they would be able to come up for the Examination of the Royal Agricultural Society, and they passed very good examinations in this particular branch. They had more than qualifying marks sometimes, in the studies for examination. There was a special study for cattle, but unless they got five "goods" they were not able to come up for examination. He thought that to some little extent the qualifying marks for "great credit" or "very great credit" might be relaxed, so as to enable more members to come up for examination. It certainly seemed a most unfortunate thing that when the Royal Agricultural Society were trying to act in unison with the College, and a high prize offered, one student should only come up for examination. As far as the Secretary and the Royal Agricultural Society were concerned, they were most anxious to encourage the students that came before the Board of the College, so that he would urge upon the Council to relax their rules, in order that more men might come forward.

Mr. GREAVES said he agreed entirely with every word that had fallen from Mr. Harpley, and thought that his proposition was a very prudent and sensible one.

Mr. HARPLEY promised to see the Secretary of the Royal Agricultural Society, and ask whether the Committee would assent to the alteration, and if so he would bring the subject before the Council for reconsideration.

This course was assented to.

The Reports of the Finance Committee and Treasurer's Balance-sheet were presented, and it was stated that the vouchers for receipts and payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £109 16s. 5d., which the Committee recommended should be discharged. The balance at the banker's amounted to £631 4s. 5d.

The SECRETARY stated that the treasurer had written, asking how much of the balance at the banker's the Council would agree to invest.

It was resolved that £300 should be invested.

On the motion of the PRESIDENT, seconded by Mr. DRAY, the report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

The SECRETARY stated that, at the request of the President, he called upon Mr. Greenwood, house agent, relative to obtaining information as to purchasing a site or premises suitable for a College. Mr. Greenwood promised that he would make the inquiry.

The SECRETARY stated that a letter had been received from Mr. Broad, of Bath, asking the Secretary to write to Mr. T. D. Gregory, of Bideford, Treasurer to the late West of England Veterinary Medical Association, who held certain funds which had been promised some years ago to the Royal College of Veterinary Surgeons.

A letter had also been received from Mr. Gregory, stating that he was uncertain by whom the funds were assigned, and offering to send the amount to the Council, provided he was indemnified from all chance of having to pay it to any other body.

The Secretary was instructed to write, accepting the offer.

Mr. HARPLEY, as executor of his late nephew, Mr. William Field, stated that Mr. Field had left £100 to the Royal College of Veterinary Surgeons, and £50 to the Benevolent Society. There had been some legal proceedings as to the legality of the payment, but as the question had been decided

on the previous Monday, he had the pleasure to inform the Council that he would be able to hand over the two sums mentioned. There would be some legal expenses ; but there would also be something due for interest, and he thought that, taking the one item against the other, the original sums could be handed over almost intact.

The Secretary read the following

Report of the Committee appointed to consider the Educational Tests to be required from candidates for Fellowship :—

The Committee recommend that the educational standard should for the present, and until further notice, consist—

1st. In such knowledge of Latin as would enable a candidate to write a Latin prescription, and to translate a given prescription from Latin.

2nd. In such acquaintance with the ordinary rules of arithmetic as is necessary for carrying on the business of a veterinary surgeon.

3rd. In writing a composition or letter on a given subject, with correctness and facility of expression, and grammatical accuracy.

January 6th, 1879.

The PRESIDENT said it would be seen for the present that, in accordance with the views of the majority of the Council, a very moderate standard had been taken, but still sufficient to secure the social and educational status of those who were admitted to the degree of Fellowship. At some future day the standard might be raised. He begged to move the adoption of the report.

Mr. DRAY seconded the motion, which was carried.

Letters were received from four candidates holding the Highland and Agricultural Society's certificate, wishing to be informed as to the rules for admission into the body corporate, and stating that many others required the same information. One of the applicants was desirous of coming up for the Fellowship degree.

The PRESIDENT said that they could not be admitted until the pending arrangements were completed.

The PRESIDENT said he had the pleasure to bring before the Council the Articles of Agreement drawn up by the Committee appointed to consult with the Highland and Agricultural Society, and he was glad to say that he believed the Highland and Agricultural Society would sign at their Annual General Meeting this day.

The SECRETARY read the agreement, which is as follows :—

ARTICLES OF AGREEMENT made and entered into this day of January, 1879, BETWEEN THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, incorporated by Royal Charter or Letters Patent, bearing date the 17th day of May 1787, by the name and title of The Highland Society of Scotland at Edinburgh, and of new incorporated by the name and style of The Highland and Agricultural Society of Scotland by Charter or Letters Patent granted the 18th day of June 1834 (and hereinafter called "the Society") of the one part, and THE ROYAL COLLEGE OF VETERINARY SURGEONS incorporated by Royal Charter or Letters Patent, dated the 8th day of March 1844 (and hereinafter called "the College") of the other part. Whereas the Society have from 1823 instituted lectures on veterinary science and medicine, and appointed examiners to examine students therein, and until 1844 granted to such students certificates of proficiency. And whereas, in 1848 the Society reconstituted its Board of Examiners, and have since granted annually certificates of qualification. And whereas it was amongst other things provided by the said Letters Patent of the 8th day of March 1844, that the concerns of the College should be directed and managed by a Council to be constituted as therein mentioned. And further that the said Council should and might make any orders, rules, and bye-laws, for fixing

and determining amongst other things the times, places, and manner of examining students who should have been educated at the Royal Veterinary College of London or the Veterinary College of Edinburgh, or such other veterinary colleges as therein mentioned, and who might be desirous to become members of the College, and for regulating the nature and extent of such examinations, and for the appointment of persons to examine and determine upon the fitness and qualifications of such students, and for the admission or rejection of such students as members of the College, and for fixing and determining the sum and sums of money to be paid by such students either previous to their examination or upon their admission as members of the College or otherwise and generally touching all other matters relating to or connected with the College, and the same orders, rules, and bye-laws from time to time to alter, suspend, or repeal, and to make new orders, rules, and bye-laws in their stead as the Council should think most proper or expedient, so as the same were not repugnant to the Letters Patent now in recital, or to the laws of the realm. And whereas by a Supplementary Charter or Royal Letters Patent, dated the 23rd day of August, 1876, it was amongst other things declared that with certain exceptions therein mentioned, and not material for the purposes of these presents, the College and the Council of the same should have and continue to have all such and the same jurisdiction, powers, and authorities for and with respect to the government of the College, and for *inter alia* the making, ordaining, confirming, annulling, or revoking orders, rules, and bye-laws, and transacting and ordaining all other matters and things whatsoever for the regulation, government, and advantage of the College as the College and the Council thereof respectively had under or by virtue of the said hereinbefore recited Charter or Letters Patent, or in any other lawful manner. And whereas, in pursuance of the powers conferred upon the College or the Council thereof by the said Letters Patent respectively, certain bye-laws have been made with respect, among other things, to the examination of candidates for the diploma of the College, and such bye-laws are still in force. And whereas, the following arrangement has been made and entered into between the College and the Society with a view to the admission of the holders of the certificates of the Society as members of the College, and also for the purpose of terminating the examinations heretofore held by the Society. Now these presents witness, and it is hereby agreed and declared and in particular the College (so far as the stipulations and provisions hereinafter contained are to be performed or observed by them) do hereby for themselves and their successors covenant and agree with and to the Society and their successors. And the Society (so far as the stipulations and provisions hereinafter contained are to be performed and observed by them) do hereby covenant and agree with and to the College and their successors in manner following (that is to say):

1. Every or any holder of a Certificate granted by the Society in manner aforesaid since 1848 shall, on application and on payment of such fees as are hereinafter specified, be admitted as a member of the College, and shall not be required to submit to any further examination previous to such admission.

2. Every holder of a Certificate granted by the Society as aforesaid, from 1848 to 1872, shall be admitted as a member of the College on payment of a registration fee of one guinea.

3. All candidates for such admission to whom such Certificates as aforesaid shall have been granted since the year 1872, shall in like manner, without being required to submit to any further examination previous thereto, be entitled to such admission on payment of fees, according to the following scale or table (that is to say):

(*a*) Every holder of a Certificate granted during the year 1873 on payment of two guineas.
(*b*) Every holder of a Certificate granted during the year 1874 on payment of three guineas.
(*c*) Every holder of a Certificate granted during the year 1875 on payment of four guineas.
(*d*) Every holder of a Certificate granted during the year 1876 on payment of five guineas.
(*e*) Every holder of a Certificate granted during the year 1877 on payment of six guineas.
(*f*) Every holder of a Certificate granted during the year 1878 on payment of seven guineas.

4. All students now enrolled at any of the teaching schools connected with the Society, to whom such Certificates as aforesaid shall hereafter be granted consistently with the provisions of these presents, shall be admitted and enrolled as members of the College on payment of a fee of seven guineas.

5. The examinations heretofore held by or on behalf of the Society shall be discontinued as from the 1st of January, 1879, but this stipulation shall not preclude or prevent the Society from holding examinations according to its existing bye-laws or regulations for persons already admitted as students of the Society who may hereafter elect or claim to be examined by the examiners thereof, in preference to submitting to examinations by or on behalf of the College.

6. The College and Society respectively shall alter, vary, and annul their existing orders, rules, and bye-laws, if and so far as may be necessary to give full and complete effect to this Agreement, and shall also, if required, apply for and use their best endeavours to obtain Supplemental Charters for the same or the like object.

7. If any doubt, difference, or dispute shall hereafter arise between the parties hereto or their Successors, touching these presents or the construction thereof, or any clause or provision herein contained, or the rights, duties, or liabilities of either party in connection therewith, the matter in difference shall be referred to two arbitrators or their umpire, pursuant to and so as with regard to the mode and consequences of the reference, and in all other respects to conform to the provisions in that behalf contained in the "Common Law Procedure Act, 1854," or any then subsisting statutory modification thereof. IN WITNESS whereof the Society and the College respectively have hereunto caused their respective Seals to be affixed the day and year first above written, &c.

The PRESIDENT moved that the agreement be approved and in due time signed.

Mr. TAYLOR seconded the motion, which was carried.

PROFESSOR WILLIAMS said he would withdraw his notice of motion, which was rendered unnecessary by the committee that had been appointed on the whole questien of examinations.

It was resolved "That the Committee should apply to the Privy Council for a Supplementary Charter to carry out the agreement with the Highland and Agricultural Society."

The meeting having terminated, a Special Meeting was then held to consider a notice of motion by Mr. Taylor for the alteration of bye-law 37, which is as follows: "No student shall be allowed to present himself before either section of the Board of the Royal College of Veterinary Surgeons for his first, second, or third examination more than three times."

Mr. TAYLOR, in bringing forward his motion, characterised the bye-law in question as cruel, oppressive, and unjust, both to the student and his parents.

He gave several reasons in support of his proposition, and remarked that there was no such bye-law in the clerical, legal, or medical professions. It was a hardship that a man after having passed his first and second examinations should be rejected on the third. It took away his last and solitary hope, and left the student a dejected and degraded man, and made the College the means of sending him into the world to get a livelihood under the guise of professional quackery or empiricism. He called attention to the fact that the clever student did not always make the best practitioner, but it was more often the plodding, industrious student who by sheer industry obtained that scientific knowledge which, after he had gained it, he retained all the more firmly in his mind. It was an injustice, to his mind, not to allow such an one sufficient time to complete his education, and he would therefore move that bye-law 37 be expunged.

Mr. GREAVES, in seconding the motion, fully concurred in the remarks made by Mr. Taylor.

The PRESIDENT said he regarded the existing bye-law as a most useful and beneficial one. It was an advantage to the student, because it checked idleness on his part; and it was an advantage to the father, because it prevented the student from wasting his time at College. It was most disadvantageous to a school to have a number of idle old students hanging about, spreading around them an atmosphere of idleness. A veterinary student ought to be a man of quickness of parts, and able to get through his work in a moderate amount of time. He did not see any injustice in the rule; on the contrary, he thought it was a most valuable one, and moved that the Council should stand by it.

Mr. COLLINS said he agreed with every word that fell from the President. At the Royal Veterinary College there were eleven who had been rejected three times, and twenty-one who had been at the College from periods varying from six years downwards. They found London a very pleasant place to live in, and so long as they remained at the College, and enjoyed themselves, the parents found them the means. As the President had said, they disseminated an atmosphere of idleness throughout the College. They knew all the haunts and amusements in London, and no doubt enticed and led away young men who came to town perhaps for the first time. He did not think it was desirable to have a number of these men hanging about the College. As to the dull members, whom some expressed a wish to legislate for, he thought that, as a rule, it was not the dull ones that failed to pass, but rather the lazy and idle men. They were generally sharp and quick, but they preferred to hang about London. He thought it was desirable to stick to the rule as it was at present.

PROFESSOR WILLIAMS said he had always objected to the bye-law, and he would support Mr Taylor in favour of its being expunged. As to the question of idle students hanging about the College, the Royal College of Veterinary Surgeons had nothing to do with it; it was a question entirely for the schools. He had sufficient experience to say that, if the bye-law was retained, now and then an injustice would be done to the slow, plodding, but deserving student, who, although he might not pass with three examinations, would eventually pass and become a good member of society.

The question was then put to the vote, when eight members voted for the amendment, and eight for the motion.

The PRESIDENT, following the example of the House of Commons gave his casting vote in favour of the *statu quo*, but said it remained for Mr. Taylor to bring forward his motion at a future meeting.

The motion was therefore lost, and the bye-law allowed to remain as it was.

On the motion of Mr. BLAKEWAY, seconded by Mr. DRAY, it was resolved

to send a letter of condolence to Professor Simonds on his recent domestic bereavement.

The PRESIDENT said he had had a letter from the Secretary of the Highland and Agricultural Society, that they had consented to the agreement that had been under discussion and had agreed to sign it.

On the motion of Mr. DRAY, seconded by Mr. TAYLOR, a vote of thanks was passed to the President for his conduct in the chair, and the proceedings terminated.

CENTRAL VETERINARY MEDICAL SOCIETY.

AT a meeting held on Thursday, December 5th, Mr. H. T. BATT occupied the Chair, in the absence of the President. The discussion was then resumed of the President's observation on the Skin Epizootic.—Mr. HUNTING said that he gathered from the minutes just read, that the affection was termed Ecthyma ; if so, was he to understand it as an affection similar to that in the human subject—papules running on to pustules, followed by suppuration and scab formation ? If so, it was allied to a disease he had noticed lately, not only in his patients, but in his own yard among nearly all the horses. It seemed to be conveyed by the saddle, crupper, or harness generally ; as the shoulder, back, or top of the rump, was the most affected. It was noticeable, also, that simple treatment was effectual ; warm water, fuller's earth, or glycerine being used. Some skin diseases were difficult to name especially ; in others there was no mistake—such as mange or ringworm. In some cases the scabs were pretty distinct till they reached maturity, when a number ran together, forming a rather nasty sore.

The CHAIRMAN, regretting he had not heard the President's remarks in introducing the subject, said he had had great experience of the disease during the last nine months, especially in large studs. In some cases no treatment was required ; others, again, were very troublesome, especially in high-conditioned animals. He had also had some hundred cases where no maize was given. In the difficult cases lead lotion and carbolic wash, with fullers' earth, were used with quick relief. Internally, he began with a dose of physic, subsequently he gave arsenic and copper, with speedy results, the boils disappearing in some ten days. Of its contagiousness he had no doubt.

Mr. SHAW said that in a case now under treatment, there was an immense slough in the shoulder. He gave arsenic, and applied zinc lotion ; it was taken by contact with a recent purchase.

Mr. DANIEL said he would only observe with regard to the maize-feeding as a cause, that he did not think it was, as when it first commenced the tram-horses were not fed on maize at all. He had some doubts as to its contagiousness, because of instances where horses exposed to it had not taken the disease.

Mr. CHARLES considered it clearly contagious. He lately attended two thoroughbred mares out of town. Driving down with his pony, till then perfectly healthy, the pony was put up at the stables, and while waiting a cloth was thrown over him, which, though it belonged to the establishment, he could not say had been on the affected animals. But three days afterwards the pony was badly diseased, and he could instance cases produced from the saddle.

Mr. DANIEL said he did not mean to say it was not contagious, but to point out a fact worth knowing, that all were not affected, though they rubbed against diseased horses.

Mr. HAMILTON said all animals, like the human subject, were not liable to take disease, even if exposed : till the nature of the disease was decided,

it was like working in the dark. The non-reception of disease by those exposed to it would almost point out that they had already had it before.

Professor AXE, who now attended, regretted that an engagement had delayed him. He said it would be idle for them to discuss the parasitic or contagious theory unless they had some data to go by. He wished now simply to relate the result of some minor experiments, so far as they had gone. He had applied to an animal's skin a quantity of matter removed from an infected horse, the hair being previously clipped from the withers, and the scab-matter was rubbed sharply into the surface. In the course of clipping the hair the skin had been slightly irritated by the scissors, and an exudation followed, but as yet no eruption, similar to that in the disease, has occurred, only a serous exudation. A rug removed from a diseased to a healthy animal becoming diseased would suggest its contagiousness, but the same rug had not given it to another healthy animal. He had also examined the purulent matter without finding any parasites. Still, it might be determined to be parasitic and contagious after further research.

Mr. HUNTING wished to direct Professor Axe's attention to a statement made earlier in the evening respecting immunity from attack—viz., that in, say, a stud of twenty horses, nine might be exempt (as he knew had been the case). It was suggested that they might already have suffered. But they could hardly understand immunity, if it were parasitic, on such a supposition. Another feature was a considerable amount of fever and excitement when the pustular condition was reached. In exanthemata, as seen in Cow-pox, that was about the first symptom.

The discussion then closed.

Mr. Albert R. Charles was elected a Fellow, and Messrs. Charles Streather, of Marylebone, and Thos. Chesterman, of Whitechapel were proposed. Present —fifteen Fellows, and two Visitors.

JAMES ROWE, Hon. Sec.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

(*Continuation of Mr. Gerrard's paper on Parturient Apoplexy. See page 48 of last month's Journal.*)

But I must hasten to notice the "*Anatomical theory of the disease.*"

The propounders of this theory endeavour to explain the reason why this disease occurs only in the bovine female, on the ground of anatomical peculiarities in the blood-vessels entering the cranial cavity, which, they assert, is the only true explanation of all the phenomena attending it.

Unfortunately, they differ very considerably in the descriptions of the anatomical relations and distributions of the cerebral blood-vessels, as well as the phenomena that such peculiarities give rise to.

For while one—Professor Walley—asserts "that the increased supply of blood to the brain of the cow, with its easier method of ingress (the flow of blood in the vertebrals being almost one *uninterrupted* and *straight* course), with the shorter neck and greater voluminity of the internal organs of the animal," is sufficient to account for it in the cow, and the reason why the mare is comparatively exempt from it; the other maintains that "the cow has no single large vessel entering the cranial cavity," but a number of small vessels which break up into a cluster or net-work of capillaries, known as the "*rete mirabile*" of Galen, these re-uniting to form the arteries of the brain proper; and that, in consequence of this arrangement, the arterial supply of the brain is very uniform, and any irregular pressure in the aortic system is only slowly transmitted to the arteries of the brain. But if this increased

pressure be long continued, œdema of the brain results, which is followed by *acute anæmia*, which Mr. Fleming maintains is the pathological condition of this disease.

In short, while Professor Walley maintains that the easy ingress of blood to the brains of the bovines gives rise to congestion, extravasation and coma, Mr. Fleming maintains, with an elaboration of reasoning and experiment unequalled in our literature, that in consequence of the complicated arrangement of the central blood-vessels, and the difficulty of influencing the circulation through them, anæmia is induced; so that you see the phenomena differ widely, as well as the *modus operandi* by which they are brought about.

Now, gentlemen, I desire to speak of all great authorities with respect, and that the more especially when we are under great obligations to them, and to no one in the profession are we more indebted than to Mr. Fleming; we owe him a deep debt of gratitude—a debt I am afraid we shall never be able adequately to pay; but we cannot allow our gratitude or our admiration of his genius to warp our judgments and cry "Amen" to his every conclusion.

Well, in this matter he adopts the German theory of Franck, viz., that it is "An *acute anæmia* and sudden loss of brain-power which account for the symptoms of this disease." His mind is evidently an eminently deductive one, for he starts from a mere speculative opinion, and then sets his great powers to work to fish in the troubled waters of physiology for facts to fit it.

To read his essay on this subject is a grand intellectual treat, for in it we can see to what an extent a well-trained mind can reach in its comprehension of disease processes, without perhaps ever having seen a case.

The position he maintains is this: Given a certain amount of aortic pressure and the parturient state, and this condition of acute anæmia must result; and in consequence, too, of this peculiar anatomical peculiarity."*

This anatomical peculiarity is a physical and mechanical arrangement for the purpose of modifying the rapidity of the flow of blood; and the type of it is that of an artery suddenly divided into a cluster of capillaries which reunite to form a single vessel.

Chauveau says of this cluster of capillaries, in relation to the circulation of the brain, that it would appear to be formed on the carotid and vertebral arteries of animals which, in a state of nature, feed from the ground; the object being to furnish an equable and prolonged supply of blood without the risk of check or hindrance, and thus to obviate the tendency to congestion of the brain during the dependent position of the head.

But this description would apply to the horse, for in a state of nature, and even in his domesticated state, he feeds from the ground, and yet it is not found in him. Moreover, he stands farther from the ground than any of the other domesticated animals, and when grazing the head is much more perpendicular than with them; so that if this arrangement be necessary in the ruminants to enable them to feed without congestion of the brain being induced, it is doubly necessary in the horse.

Further, we must remember that solipeds are monogastric animals with

* (This position is not mine, nor do I maintain it. If reference be made to "Veterinary Obstetrics," p. 656, it will be found that Franck (who is a very distinguished teacher at the Munich Veterinary School, and a good authority on cattle diseases), assumes it. That adopted by Mr. Gerrard, and which is well known on the Continent, is now almost entirely abandoned, as it is found that it does not afford a satisfaction of all the phenomena observed in Parturient Collapse.

It is scarcely necessary to mention that I have had some experience in the disease, though of course not nearly so much as Mr. Gerrard. But I do not attach so much importance to merely *seeing* a great number of cases of any disease, as I do to careful study and close observation of a few well selected cases.—*G. Fleming.*)

large intestinal development, and require a much longer time to gather and masticate their food than the polygastric ruminants, which can hurriedly gather up their provender and lie down to chew at their leisure. Consequently solipeds most require this complicated cerebral arrangement of blood-vessels, if this is its object.

But with all due deference to the opinions of such great men, I take the liberty of questioning the correctness of their conclusions, and of stating my reason therefor.

Every one, I presume, will be prepared to admit that in the arrangements of nature there seems to predominate evidence of benevolent design and operation.

Now we judge of the design of a contrivance by its predominant tendencies and effects. If evil were to result as often as good, we could not decide whether the design was benevolent or not; but if we find that the benevolent effects of every natural contrivance are so obvious and outweigh any evil results, then we are compelled to admit that the design is benevolent. The law of gravity is essential to the preservation and comfort of the world; yet it frequently gives rise to frightful accidents to men and animals.

In the animal frame we find a multitude of organs, nearly all of which are obviously adapted to a particular use. Now, the anatomist cannot lay his finger upon one of these and say, "this was intended to produce derangement and pain in the system." Here is a muscle contrived to clog the operations of its neighbours; here a blood-vessel adapted to corrupt the blood and produce disease; here a gland whose object is to secrete a poisonous fluid to contaminate the whole system; there a nerve made to produce pain; here a plexus of vessels suited to bring on disease—nay, the anatomist perceives at once that all the organs of the animal system and their collocation are fitted in the best possible manner to produce health, nay more, that there is nothing superfluous in the animal economy—nothing in vain.

Such being the case, we are led to ask what can be the object of this peculiar arrangement of the cerebral blood-vessels of ruminants; for we have seen that it must be benevolent.

Now it is obvious that the principal object observed in the formation and functions of the lower animals, is the preservation of the species; and for that purpose they are fitted by nature with organs of offence and defence, but suited to their various habits and requirements, and thus maintain the balance of organic nature. In a state of nature solipeds depend for their safety on their power of flight; hence their structure, the small stomach, the single digit, and the guttural pouch found only in them, the function of which seems to be to assist the sense of hearing, all tending towards the same benevolent end, viz., the preservation of the individual by flight.

The ruminants, on the other hand, depend for their safety upon their heads and horns; hence the immense development of the latter, and hence, as I think, the peculiar arrangement of the vascular supply to the former.

If this be not the object of it, it is more difficult to reconcile it with the theory of congestion from the dependent position of the head, seeing that solipeds hang their heads more in the gathering of their food, and yet have no such arrangement.

Moreover, it is better developed in the sheep and goat than in the ox tribe, and these are better suited to live in glens and on rocks and mountains in their natural state than the ox tribe; and this special arrangement of the circulatory system enables them to do so with greater safety, by equalizing the blood supply to the organ in which consciousness resides.

Nor is this the only organ in which anatomists find this special arrangement of the circulatory system. We find a type of this in the vascular pouches called the *glomerules of Malpighi*, and something similar in the

vena porta. The blood furnished by the cœliac axis and the mesenterics to the organ of digestion, is brought back by a number of veins into a common trunk called the portal vein, which, instead of emptying immediately into the *vena cava*, is first distributed in the liver in the same manner as an artery, and forms the afferent vessels of the liver, the capillaries, and finally the efferent vessels or hepatic veins, which flow into the *vena cava.*

The object of this is evidently to slacken the flow of blood, and to increase the surface of transudation. But we must pass on to notice the reasoning by which this anatomical theory is supported.

Notwithstanding the number and elaborateness of experiments and physiological laws adduced in support of the anæmic nature of this disease, not one single proof from autopsies has been produced, if it is possible to discover or demonstrate an anæmic condition of the brain *post mortem.*

All practical men agree in considering it a matter of great difficulty to reconcile with any certainty, the morbid appearances found in the brain with the symptoms observed during life. Many cows die with undoubted apopletic symptoms, and nothing has been found but congestion of the vessels of the scalp, the membranes of the brain, or the brain itself, and sometimes not even that. But if it were of an anæmic nature from any cause, it should be determined more easily. Anæmia is ordinarily recognised by the blanched and bloodless condition of the system generally, or of the organs involved. I have sometimes thought that the brain and nervous system in this disease presented a normal appearance, so that one might be led to infer that such might be the condition inducing those symptoms. But lately I have found well-marked cases of congestion, extravasation, and even clots on the brain and congestion of the meninges; so that I am inclined to question the correctness of the anæmic theory.

Mr. Fleming, however, maintains that this very congestion we find is the result of the hyperæmia leading to œdema; and when this occurs, anæmia sets in, in consequence of the œdema causing contraction of the blood-vessels, and preventing the further supply of arterial blood to the brain; this is aided by the heart's hyperplasia and the hydræmia which, he says, exists in all pregnant animals.

Well, I am not prepared to maintain that anæmia does not occur under such conditions, and that it is not the pathological condition present in parturient apoplexy; but I humbly submit that we would require better proof than that offered by experiments on living animals in the production of epileptic attacks and spasms, arising from an anæmic condition of the brain, induced by bleeding an animal to death; or the injection of water into the carotids, as performed by Bidder and Munk in the production of *Eclampsia*, before we can accept it as the cause of the phenomena observed in this disease, or the true theory thereof.

A theory to be true must be consistent with the undoubted facts of the disease, and with the established principles of physiology.

Now, if congestion of the brain and this attendant phenomena of acute anæmia can occur in ruminants, with a special provision as it were, against it, why does it not occur in solipeds, where the vascular arrangement is such as to allow of a more rapid ingress of blood to the organ?

In the mare, the process of parturition is suddenly accomplished in natural labour, and the involution of the uterus is more rapid even than in the cow; therefore, according to the theory of aortic pressure and anatomical conformation, we should expect to find congestion, œdema, acute anæmia, and all its attendant phenomena in her, but we do not.

Nor do we find Parturient Apoplexy in the ewe, although she possesses the anatomical peculiarities of the cow in a more pronounced form, and the parturient process is quickly and easily performed. Even in the sow—where

Mr. Fleming says "the *rete mirabile* is greatly developed," I have never seen or heard or read of a case of Parturient Apoplexy bearing any resemblance to that in the cow. Indeed, I never knew that it did occur in them until I read it in the "Veterinary Obstetrics"; but this you may set down to my having seen little pig practice. Not so, however, for I live in a pig-producing county, and have a fair amount of parturient practice in pigs; yet I have never witnessed a case.

I may mention that I have frequently seen in them, what he says Ellenberger and Wostendorf designate "*Parturient Eclampsia*," where the appetite is lost, and there is persistent lying, and refusing to allow the young to suckle, with elevated temperature, bowels constipated, and the suppression of the lacteal secretion. But I never saw any convulsions or loss of sensibility, or anything approaching the Eclampsia of woman as described in the Rosenberg-Traube theory.

And, again, it is a well-known fact that in cows killed while labouring under this disease the blood is very plastic and very plentiful; so that the statement that it is hydræmic in them which conduces to this disease, requires some qualification or explanation, for the appearance which it presents suggests the idea that it has been flowing through the body without being properly deprived of its arterial characters, instead of being more diluted by the pregnant state—expressing the existence, as it were, of an extensive vasa motor paralysis.

The blood of the mare may, I think, be considered more aqueous even than that of the cow—if we may judge from a comparison of their milk; and this, taken in connection with the fact of the parturient act being more rapid and easy in the former, goes far to show that Parturient Apoplexy would be more likely to occur in them, if the anæmic theory be true. And that the more especially when we consider the ready influx of blood to their cranial cavity, in comparison with the special arrangement found to exist in that of ruminants.

The involution of the uterus is as speedily accomplished in the mare as in the cow; consequently, the aortic pressure must be equally great, and even greater, if we take into account the size of the two mammary glands and the quantity of blood going respectively to each of them.

From this it follows that if acute anæmia be induced in the way Mr. Fleming describes, and if it be the condition of the brain producing collapse, or Parturient Apoplexy, we have all the necessary conditions for its production in the mare, and in greater abundance even than in the cow. Indeed, all the conditions he sets forth as existing in the cow, and favouring its production in it—such as hyperplasia, hydræmia, the super-abundance of blood thrown back on the system by the quick contracting uterus causing aortic pressure, the high condition, and even the teleological conditions, are all present in the mare, and we do not meet with it in her.

No one can doubt or disbelieve the large array of physiological facts tending to show that a reduced flow of blood to the brain will lead to unconsciousness and loss of volition, or that epileptic attacks and spasms may arise from brain anæmia; but because anæmia of the brain will give rise to these symptoms, it does not necessarily follow that Parturient Apoplexy or Collapse is produced by anæmia, unless it be admitted that the condition of serous and sanguineous extravasation frequently found on the brain in this disease, is an anæmic condition.

If this be admitted or can be proved, it will alter very materially our views regarding the apopletic condition; for it is very generally—indeed, universally—regarded as the result of sudden pressure on the brain substance. Magendie has shown that a very slight degree of pressure on the brain was sufficient to deprive an animal of consciousness, and that the

moment pressure was removed the animal waked up again. But the lesions found in persons who die from apoplexy vary much.

Sometimes the evidently congested state of the brain during life leaves no trace visible after death; such cases have been described as "Nervous Apoplexy" (Sandras). But when one finds well-marked appearances of serous and sanguineous effusion into the brain cavity or ventricle, it is more in accordance with physiological facts to regard it as Apoplexy from pressure than from arterial anæmia.

But Mr. Fleming admits, indeed brings forward evidence to show, that anæmia can be brought about in quite a different manner, and that, according to the dictum of a celebrated physiologist, an animal "can bleed to death in its own portal vessels." For the proof I must refer you to his great work, and can only say that anæmia brought about by such conditions would be evident by the absence at all times of congestion or effusion in the cranial cavity.

Nor do we always find these even in fatal cases, or cases that would have proved fatal if allowed to live sufficiently long. If effusion were extensive, recovery would be at all times impossible; and the extent of the extravasation makes, I think, all the difference in the cases we have to treat.

Closely connected with this condition of brain anæmia is the subject of sleep and narcosis arising from the administration of chloroform and ether.

To account for these conditions of the system Mr. Fleming adopts the usually received theory of anæmia as the conditions existing in them; but this, too, has been called in question no later than last year by a Dr. Kennedy, of Dublin, in the *Dublin Journal of Medical Science*.* There he states his views, based on actual observations; he says:—"A man of middle-age, whilst drunk, had his skull severely burnt at a lime-kiln where he had fallen asleep. In a short time very urgent symptoms of pressure appeared, and he was trephined over the centre of the parietal bone. Subsequently the opening was enlarged, and the brain exposed, the dura mater having been removed to allow of free vent of pus. Whilst in this state I had the dressing of the case for several weeks, and plenty of opportunities for seeing the patient both asleep and awake, and I never saw him asleep that I did not observe marked congestion of the vessels—more particularly what seemed to be the veins—whilst all the vessels visible assumed a dark hue. And when the patient awoke, it was very interesting to observe, first, an increase in the rapidity of the circulation, and then a change in the colour of the blood, and it sometimes seemed as if new vessels, or at least some not seen before, had made their appearance." Now, these views are adverse to Durham's, and which Mr. Fleming adopts. They are that—"during sleep the brain is in a comparatively bloodless condition." Kennedy also contests the opinion of Hammond, in reference to the state of the fontanelle in infants. Hammond says—"the anterior fontanelle was always depressed during sleep, and elevated during wakefulness." But Kennedy found, during a series of observations extending over two years in the Rotunda Hospital, that whether the infants were sleeping or waking, no appreciable difference could be observed, and he could only detect a distinct elevation in two, and both these infants were crying lustily."

I must not, however, waste further time by looking into any more of these side issues; but as these states and conditions of the brain were alluded to by Mr. Fleming, to account for the symptoms observed in the disease under consideration, I thought it better to show that on them even there was very great difference of opinion, and that anæmia does not play such a part in the production of these conditions and diseases as has hitherto been

* *Dublin Journal of Medical Science*, June, 1877.

assigned to it. And further, that granting anæmia to be the physiological condition in the disease, the anatomical peculiarity existing in the cranial blood-vessels of ruminants contributes nothing towards its production—nay, rather that it tends to prevent it, by equalising the circulation, and thus preventing congestion of the organ and its consequences. It is very difficult, indeed, to see how it could bring about anæmia in the way indicated by Mr. Fleming, nor does he make it very evident how anæmia occurs at all through this arrangement.

"The following," he says, "seems to be the result of the peculiar distribution of the vessels:—1st. The circulation of arterial blood to the brain is very uniform. 2nd. Irregular pressure in the aortic system cannot easily, and then only slowly, be transmitted to the arteries of the brain. Now, however, Bidder's experiments have shown that sudden increase of blood-pressure does not produce any comatose symptoms, but that these always set in if the increased pressure is of any duration. Under these circumstances brain œdema is much more likely to set in than if the blood-pressure were to disappear quickly."

Now the question to be asked and answered here is: Where does this increased and prolonged blood pressure take its rise, and how is it sustained? It cannot certainly be in this *rete mirabile*—or an artery suddenly dividing without altering its normal dichotomous disposition, and then gathering itself up again. The effect of this is evidently to slacken the circulation, and if the *vis a tergo* be removed or weakened, this peculiar arrangement will respond in accordance with the constitution of all arteries, and which is but a physiological result of the struggle between the two elements composing the tube, the elastic and the muscular.

The increased pressure must take its rise from the heart's hyperplasia, the increased quantity of blood returned to the circulation, and the parturient state—conditions present in a greater or less degree in all animals.

Unless we suppose, for he does not avow it, he believes that the amount of blood or fluid circulating in the brain is an unvarying quantity, and that in consequence of this dilatation or diverticulum on the carotids of ruminants, the blood is held back for a time and rushes into the soft brain tissue, after the *vis a tergo* is removed, and thus produces congestion, œdema, anæmia, and death. I cannot see how the theory can be seriously entertained, for it is devoid of physiological or pathological facts by which to maintain it.

Professor Williams well and tersely remarks of the anatomical theory, that "it is upset by the fact that the disease is inseparable from domestication and stimulating food, peculiar to deepmilkers, and scarcely ever succeeding difficult parturition, which most assuredly would be the case if shortness of neck and excessive natural vascularity of the brain and its membranes, were predisposing causes."

(To be continued.)

THE CANINE RACE.

(*Continuation of Mr. Hill's address. See page* 33 *in last Journal.*)

Should not these facts, then, convince us how improbable are many of the reported cases of Rabies and Hydrophobia. Of course, the press report according to the information received, but that information is, I fear, often given regardless of the consequences that may ensue; and it would be well in any such supposed cases of Rabies and Hydrophobia, that a medical certificate on the one subject and a veterinary certificate on the other, where practicable, should be required by the press before making public—and

disturbing the peace of many—a death which may have resulted from other causes.

The brooding over fears, the nervous apprehensions consequent, in a great measure, on the absurd mania for putting nervous excitability and exhaustion, delirium, tetanus, acute insanity and the like, down to Hydrophobia, because there happens to be a *modicum* of semblance to that malady, and allowing it to go forth in sensational paragraphs, is an evil we cannot too strongly endeavour to counteract. I have no doubt, as the *Home Chronicler* observed last year, "That if all the reported cases of 'Hydrophobia' could be thoroughly sifted, and cause and effect be set in their absolutely true relation to each other, these cases would be very differently classed in the medical text-books, and the public mind would be relieved, to a great extent, of a prejudice that is a source of infinite mischief."

Near upon fifty years ago, Dr. Abercrombie warned us against :—"1. Receiving as facts statements which are not facts, but opinions. 2. We must guard against receiving as a fact a statement which only assumes the relation of facts. 3. We must not receive as facts general statements, or the generalization of facts."

Though half a century has almost passed since these words were written, as the *Medical Press* observes, "like good wine they have lost nothing by age."

The treatment of a bite is a subject I have dealt with in my work on the "Management and Diseases of the Dog," a copy of which I have presented to your library. It is scarcely admissible in a lecture of this character ; nevertheless if it is attended with benefit, I shall feel more than rewarded by giving you in a very few words my advice.

With regard to ourselves, all dog-bites, as a precautionary measure, should be treated as if they were inflicted by a rabid animal—*i.e.*, by immediate suction—followed by the application of the actual cautery or nitric acid. When Rabies is suspected, the suction should be directly followed by complete excision of the wound, performed as quickly as possible ; after which, without loss of time, the cautery or acid should be freely used. Compression above the wound, especially in the first instance, is also valuable in preventing the virus entering the circulation, and increasing the outward hemorrhage. When employing suction, the blood should be frequently spat out, and the mouth afterwards rinsed with alum-water, vinegar, or spirits.

Lastly, but not less important, all ideas of Hydrophobia should be driven from the mind as far as possible, and every means used to encourage the belief that the animal was in health, and that no suffering beyond that of a common wound was likely to follow. The same local measures, excepting the suction, which to some extent might be done with a cupping-glass, will apply to a dog bitten under suspicious circumstances.

One word as to the destruction of dogs. When from certain reasons a dog must be put to death, the most humane measure should be adopted, and this is undoubtedly chloroform. I never have recourse to any other means. It is certain, simple, painless, and not so repugnant as the gun or poison. The animal falls asleep and slumbers to death, and you have the comfort of knowing that you made the last moments of your dumb friend's life as devoid of suffering as possible.

Time will not permit me to trespass much further on your patience, otherwise I could dwell on this interesting theme for a much longer period. You who are happy in the ownership of a dog will, I am sure, continue to appreciate his sterling worth, and if there are any here who do not possess such a friend, well, some day you may, and when you do, depend upon it his welcome home will be one of the warmest you will receive.

I will close these remarks in the sincere hope that what I have said may

bear some good fruit. In advancing the claims of the "canine race" I have had a most pleasing task to perform, and I must thank you warmly for the attention you have accorded me. I confess with pride, that dogs have long been my hobby. Many interesting hours have I spent in studying their whims, instincts and ailments; and the more I have studied them, the more I have been convinced of the goodness of Providence in bestowing on man, as a special companion, such a noble specimen of a lower race.

In my daily contact with them, both in sickness and health, I have learnt some wholesome lessons—lessons of patience and endurance, of courage and truth, "give a dog a bad name and hang him," is an old proverb; but there are few dogs which deserve it. A just appreciation of all their good qualities will remove this from a reasonable mind. Apply the proverb slightly altered but in the same sense to a man, give him a bad name and he loses cast, but by zealously striving to make himself a man among men, he may outlive prejudice and hold his own. Train a dog, if his disposition is good, properly, and he will in like manner in time induce you to form a better opinion of him. There are dogs and dogs, and "a good dog deserves a good bone." How much must Lord Byron have valued such a friend, when he penned that inscription for the monument of a Newfoundland dog :—

When some proud son of man returns to earth,
Unknown to glory, but upheld by birth,
The sculptor's art exhausts the pomp of woe,
And storied words record who rest below;
When all is done, upon the tomb is seen,
Not what he was, but what he should have been:
But the poor dog, in life the firmest friend,
The first to welcome, foremost to defend:
Whose honest heart is still his master's own,
Who labours, fights, lives, breathes for him alone,
Unhonoured falls, unnoticed all his worth,
Denied in heaven the soul he held on earth:
While man, vain insect! hopes to be forgiven,
And claims himself a sole exclusive heaven.
Oh man! thou feeble tenant of an hour,
Debased by slavery, or corrupt by power,
Who knows thee well must quit thee with disgust,
Degraded mass of animated dust!
Thy love is lust, thy friendship all a cheat,
Thy smiles hypocrisy, thy words deceit!
By nature vile, ennobled but by name,
Each kindred brute might bid thee blush for shame.
Ye! who perchance behold this simple urn,
Pass on—it honours none you wish to mourn;
To mark a friend's remains these stones arise,
I never knew but one—and here he lies.

A cherished memory is, with most of us, the only monument to a lost favourite, and a faithful tribute it is to all we love. Few of us here would require the sculptor's work, which, when out of sight is frequently out of mind, to bring to our remembrance the sterling friendship and fidelity of a lost companion like the dog. Whatever the monument may be—memory or marble—what a wide contrast does it present to the "hack and hew" regard of the vivisectionist. Methinks those beings—*human beings would be a misnomer*—who select the noblest of their master's lower creation for experimental purposes, such as are adopted in this abhorrent practice, even though their excuse may be the advance of science, can have little true sympathy with or feeling for dumb animals.

In the words of Ernest von Weber, spoken before the Dresden Society "It is not science that we wish to restrain, but those who hide under the mantle of science frivolous curiosity and the mania for discovery, regardless how many thousands of highly sensitive human beings are cruelly and uselessly sacrificed." "Saddest of all," he says, "is the fact, that the favourite animal of those who slowly torture animals to death, and subject them to experiments lasting often for days and weeks, is the one which, from its touching devotion and fidelity to man, has the highest claim on his protection—is the dog, which in its nervous sensitiveness and intelligence approaches nearest to man. And what is the reason for this preference? The manifesto of the medical faculty of Zurich tells us that it is because it is the cheapest and most easily procurable of warm-blooded animals. What Plebeian coarseness! what revolting avarice is this! Apostles of science are not willing to make even the smallest sacrifices for ethical and moral considerations, whilst we are assured by eye-witnesses that poor dogs bound to the torture-trough, still show their confiding trust in man, by wagging their tails and licking the hands of their murderers, as if praying for mercy."

I think, then, I have said enough to convince you that personally I am opposed to vivisection in every sense of the word. I believe it to be demoralizing in practice, and cruel and degrading to those who pursue it.

If men would only pause to consider, before they inflict such cruelty, what absolute right they have to the animals given for their protection, and remember they are only placed at their disposal for a higher and nobler purpose, and that in Weber's words—"We owe them as living, sensitive, intelligent creatures certain duties, the least of which is not to torment them," they might abandon with repugnance the idea of vivisection.

Be assured we are each of us invested with some amount of responsibility for the welfare of all God's creatures over which we have control. The way in which we exercise that responsibility will be a matter for the hereafter. We should, therefore, strive to be a blessing to them, ever considering it a sacred duty to prevent or alleviate pain and distress in animals; by so doing we shall earn a good name among our fellow-beings, and the appreciation of those on whom our cares are bestowed—

He prayeth well, who loveth well
Both man, and bird, and beast;
He prayeth best, who loveth best
All things, both great and small:
For the dear God who loveth us,
He made and loveth all.—*Coleridge.*

Alderman WALKER, Chairman of the Free Library Committee, in moving a vote of thanks to Mr. Hill, said the Committee were doubly indebted to that gentleman, for not only had he given them an excellent lecture, but knowing the limited accommodation which they had in the library premises for the Saturday night meetings, and the little money which the Committee had at their disposal, and that they could not engage a larger room, he had secured the Assembly-room himself, and had undertaken to pay the whole expenses, not only of that, but also of printing and advertising the announcement of the lecture. (Loud applause.) He (the speaker) hoped the time was not far distant when a little more generosity on the part of the Town Council would place the Committee in a better position. (Hear, hear.) He believed this was the only town in England where the Town Council exacted a rental from the Free Library. The sum of £125 per year for rent took up a large portion of the library rate, and they had also a debt of £140 to wipe off, and if the Council would forego the question of rent the Committee would be able to provide a suitable lecture room—indeed it was a matter of considerable

chagrin to the Committee that they had not been able to do so ere this. (Hear, hear.)

Mr. J. PHILLIPS, who seconded the motion, referred to the kindness with which Mr. Hill had acceded to his (the speaker's) request for a copy of his work on the dog for the Free Library, and his by no means smaller kindness in consenting to deliver the entertaining, instructive, and useful lecture which they had just heard. (Applause.)

Lord DARTMOUTH, before putting the motion, paid Mr. Hill a compliment for the excellence of his lecture. He added that he yielded to no man in that room in his love for the dog. (Hear, hear.) He did not know whether this fact was owing to the fact that he was a native of this neighbourhood. Doubtless, some of them had heard the story of a native of the Black Country and his dog—for when there was anything that was supposed to be ridiculous, or brutal, or ill-conditioned, it was always fathered on the Black Country. (Laughter.) The story was that a father went home and asked the mother, "What's become of the milk?" and she said she had given it to the child, whereupon he replied, "Thee shouldn't have given it to the child; thee should have given it to the pup." (Much laughter.) He did not mean to say that he (Lord Dartmouth) should be prepared to go so far as that—(renewed laughter)—but he would say that he considered that anyone who could not appreciate the affection of a favourite dog had something very deficient in his or her character. (Applause.) In Eastern countries the dog was spoken of in terms of reproach, but he was glad to say that such was not the case in this country, as he was here considered what he really was—a very noble animal. (Hear, hear.) They heard sometimes the phrases "savage dog," which was not altogether complimentary, and "ugly dog,"—(laughter)—but when it was said a man was an "ugly dog," the expression generally meant that although he might not be extremely beautiful he had inwardly a great many graces which atoned for his looks. (Applause.) He could detain them to a considerable length with anecdotes of some of his departed canine friends, but he would only mention one little incident which showed him that the dog had even a sense of patriotism in him. He had once a dog which considered itself as attached to the volunteer corps under his (Lord Dartmouth's) command, and he remembered that one occasion, when the band was out with the corps, the dog came out also to assist at drill, in which he, no doubt, thought he played a very important part. (Laughter.) One of the bandsmen had brought with him his little boy in plain clothes to carry his cape. This the dog resented as an insult to the corps and the uniform, and he never saw him so angry as he was when the boy had the audacity to march with the company. (Laughter.) He (Lord Dartmouth) thought there was something very creditable on the part of the dog in that, although the boy at the time was not of that opinion. (Laughter.) They would pardon the feelings of one who was so deeply attached to that dog—which was, alas! no more—for having digressed in the manner of an anecdote. He thought Mr. Hill had laid before them the whole subject in a lucid and admirable manner. (Applause.) He agreed with Mr. Phillips that the poem of Lord Byron (whose epitaph on a Newfoundland dog the lecturer had quoted) was not quite creditable to Byron's own character. His affection for his dog was creditable, but he agreed that if Byron had shown more affection to his fellow-men and fellow-women, it would have been better for himself and for posterity. (Applause). With regard to the resolution, he might say he was personally thankful to Mr. Hill, and he did not think they could have spent the evening better than in listening to such a lecture as that just delivered. He trusted that they would shortly have better premises than they had at present at the library for these lectures. He hoped to be able to add something to their museum, and he should be glad at a future time of an opportunity to attend another

of these Saturday evening lectures, and in some other way to render them assistance. (Applause.)

The vote of thanks was passed with great heartiness.

Mr. HILL, who was greeted with prolonged applause, said he begged to thank them most sincerely for their appreciation of his efforts that evening. It had afforded him no small amount of pleasure to know there were so many in his native town of Wolverhampton who took such an interest in the subject he had brought before them, and it had also afforded him the highest possible pleasure to be honoured with the presence of those who exercised such a great though gentle influence on all their actions, viz., the ladies who had been present with them that evening. In the treatment of his patients he always maintained that good nursing was half the battle, and if it were not for the assiduous attentions of the fair owners of most of his canine sufferers, he should be far from the successful veterinarian he was. He begged, therefore, to especially tender them his best thanks. He also could not, before sitting down, fail to express his deep appreciation of the honour that had been conferred on himself personally, and all who represented the Free Library, in the kindness of the Earl of Dartmouth in presiding on that occasion—a memorable one so far as he was concerned, inasmuch as it was his first attempt at a public lecture in Wolverhampton. He could only assure them if such subjects as the one he had dilated on that night was of sufficient interest to merit their approval, it should not be his fault if it was the last. He felt his efforts were undeserving of the flattering remarks which had been made,—flattery though he would rather not call it, for he took them as the highest compliment that could be paid to a lecturer. He could assure them they would act as a stimulus to him in the future, and though on this occasion he had done his best he would try on the next to do still better. (Loud applause.)

On the motion of Mr. A. C. Pratt, seconded by Mr. J. O. Lee, a vote of thanks was passed by acclamation to the noble Chairman, and Earl Dartmouth, in acknowledging the compliment, said it had been suggested that he should give them a lecture on sheep, but he was afraid that would be a very dry and technical subject. However, he was not capable of making a promise in that direction, but he hoped to help the Free Library, if not by his voice, by some contribution that would be acceptable. (Applause.) And now, as "the dogs" had had an evening with them, let them hope they would be spared to have many another evening with "the dogs." (Laughter and applause.)

PATHOLOGICAL SOCIETY OF LONDON.

DIPHTHERIA *versus* MILK.

AT the meeting of this Society, held on January 7th, Dr. C. Murchison, President, in the chair,

Dr. BUCHANAN read a paper communicated by Mr. W. H. Power upon certain observed relations between Diphtheria and Milk, remarking that when it was remembered how much the etiologists owe to the pathologists in the elucidation of disease, he could not but think that the pathologists would value in their turn any suggestions for further research furnished by the etiologist. The present note was the outcome of Mr. Power's research into the recent epidemic of Diphtheria in North London, where it was proved beyond a doubt that the disease had a distribution corresponding to the distribution of a particular milk; and, so far as it is possible, it has been demonstrated that in this instance the milk was the cause of the Diphtheria. But how did the milk become capable of distributing the infection of the Diphtheria? Here an interesting fact came out in the course of the inquiry,

for it was found that the milk-supply came from two sources, one from cows kept at Muswell-hill, and the other from some at Kilburn, both sets belonging to the same owner; and whereas at one period of the epidemic the potency to do harm seemed to come from the Muswell-hill source, and not from the Kilburn, yet later on there was, as it were, a transference of such morbific agency; so that afterwards it was the Kilburn milk alone that appeared to have relations with the infection. No external conditions could be found to account for this, and the conclusion appeared to be forced on the mind that in some condition of the cow as cow, and of her milk as milk, is to be found the possible source of the morbific agent. The history of other milk-epidemics was considered in this connexion. First, as to Enteric Fever. In many instances in which a relation has been traced between milk distribution and Enteric Fever there is no doubt of the disease being due to the dissemination of milk contaminated by impure water or air. There are other examples where such introduction of water or air has been but obscurely made out, whilst there remains a third class where the intervention of infected air or water has seemed unlikely, and where the readiest explanation of the outbreak would be afforded, if milk, apart from air or water contamination, could be regarded as the source of the disease. In other words, supposing that milk *per se* were able to produce Enteric Fever, the observed facts of such epidemics would tally better with the hypothesis of direct infectiveness of milk rather than with the intervention of water or air. In Scarlatina there are instances of milk epidemics in which the facts are such as to suggest that some condition of the milk alone is capable of producing the disease. In Diphtheria, in the epidemic just mentioned, no support is given to the hypothesis that any antecedent human cases are necessary for the origin or propagation of the disease. As to the probability of such contagious diseases being communicable from animal to man, Mr. Power points out that already we know of several diseases in the cow capable of infecting the human subject. There is Vaccinia *ejusdem generis* with human Small-pox, which can be produced in the cow by inoculation with Small-pox matter, but which in the cow is a comparatively harmless disease, and not having the properties of human Small-pox, for Vaccinia in the cow does not tend to spread in the air from cow to cow; it affects the udder and does not appear to influence the milk secretion. There is the "Foot and Mouth" disease, which affects the milk secretion to a certain extent, and gives rise to aphthous affections and disturbances of the stomach and bowels among consumers of the milk. Then there is miliary tubercle of the cow. Animals consuming the milk of tubercular cows have been known to get tubercle; and possibly this may be true of man also. The Anthrax Fever is known to communicate an analogous disease to persons eating the flesh of cattle which have died from its effects, and a throat disease among pigs that have been fed on it and on the milk. Lastly, if an instance of a parasitic disease may be taken which, comparatively harmless in the quadruped, is of serious import in man, the case of Trichinosis may be cited. With such instances in mind, there appears to be *primâ facie* ground for considering whether Diphtheria may not be produced in man by the ingestion of milk contaminated and altered by some condition of the animal itself; and the question naturally arose, whether, for instance, in the North London epidemic any particular disease prevailed among the cows furnishing the milk, and, if so, whether such disease were specific or not? Whatever it is, it must be an affection which disturbs but little the general health of the animal, whilst affecting the quality of the milk. "Garget" is the trivial name given by cow-keepers to a disease which at times affects milch cows. It is an affection of the udder, and it attacks usually one or two, seldom all four, quarters of the udder, being accompanied by swelling of

the part and by the discharge of blood-stained milk from the teat or teats, with subsequent discharge of ropy fluid and blood. But the quantity and quality of the milk yielded by the sound quarters of the same udder are not altered. It was said to lead to no obvious effects in the animals, but Mr. Power was only able to glean information from non-medical witnesses.* He also learnt that there was another affection of the cow, characterised by the admixture of blood with milk, without decided affection of the udder. The period of the inquiry into the North London epidemic, when he had learnt the above facts, was too late to test their application in that instance, and his inquiries of the owner of the dairy in question served only to show to him that the cows might suffer from "garget" without the owner hearing of it, the affection being regarded as so trivial a one. Mr. Power's note concluded by pointing out that in "Garget" we have a disease which can pass unobserved in the cow, and yet possibly it may have relations with human Diphtheria, and it was therefore worthy of further study.—The PRESIDENT, after alluding to the importance of encouraging the study of diseases of the lower animals, said that he could thoroughly endorse Dr. Buchanan's statement as to the connexion between milk and the epidemic of Diphtheria in North London, having been made out by Mr. Power in his report. The subject of the communication of diseases in animals to man had always been to him of deep interest; and he would cite Hydrophobia of man as being another instance in which the human disease differed in its clinical course from the same affection—Rabies—in the dog. On the occasion of the Marylebone Epidemic of Enteric Fever from milk contamination five years ago, some people started the notion that possibly it was not due to the admixture of contaminated water, but was dependent on some disease of the cow. For his own part, he was firmly convinced that then it was due to the water, and it was quite new to him to learn that Enteric Fever might originate in a cow.

Mr. A. H. SMEE then read a paper upon Garget, having been led to inquire into the subject from Mr. Power's conclusion after his investigation into the North London epidemic of Diphtheria, that the outbreak was connected with the milk supply, but that there was no evidence to show that the milk was contaminated after it left the cow; and he wished to know whether there existed any form of disease among cattle which, although capable of fouling milk, produced so little constitutional disturbance in the animal that the disease might escape the notice of dairymen. Mr. Smee found on inquiry, that a condition of ropy milk connected with a state of the udder, in some districts called "Garget," was of such a nature. So lightly is it regarded among dairymen that Mr. Smee found, when making experiments for his work on milk, that his own bailiff, who was engaged in collecting specimens of milk of diseased animals in the district, did not think it worth while to call Mr. Smee's attention to cases of it which were occurring among his own cows. Nor was it much known to veterinary surgeons, as the cowmen treat the disease themselves, and frequently do not inform their own masters, believing that their own ill-treatment or carelessness in milking may be the cause of the disease. The quality of the milk is, however, greatly altered, so as to spoil for "setting" a large quantity with which it may be mixed; but when used for immediate consumption it is very probable that dairymen would not detect any change in it. Mr. Smee then read the answers forwarded to him from different parts of England and Wales to the series of questions he had framed bearing on the affection, which it is impossible here to give in detail; and then proceeded to state that it was obvious from these replies that under the generic name of Garget there are more than one form

* [In our next issue, we shall have some comments to offer with regard to Mr. Power's and Mr. Smee's papers, in their relation to Veterinary Science. ED. *V. J.*]

of disease. First a Garget referred to traumatic origin from blows on the udder, or pressure on it, or rupture of a vein in stock-making—*i. e.*, leaving milk in the udder for twenty-four to forty-eight hours, in order to enhance the value of a cow for sale. Probably the larger number of cases of ropy milk arise from this cause. Calves fed upon the milk of this kind of Garget do not appear to be affected in general health. Secondly, a form of Garget produced by cold, which runs an acute course. It does not appear to affect the general health of the animal, or the health of pigs or calves which may be fed with the milk. Thirdly, a form which occurs less frequently, and is possibly of a specific nature. This form not only appears to affect the general health of the animal (as in one case, where a cow had loss of power on the side of the affected quarter), but it also seems to affect the milk in such a way that it may injure the health of calves. An analysis of milk from the affected quarter of a cow stated to have ruptured a vein in stock-making yielded—total solids, 11·97 ; fats, 2·95 ; non-fatty solids, 9·02 ; ash, 0·62. And, although distinctly coloured, as from blood, no blood corpuscles could be found under the microscope, but only particles of bone-colouring matter of indeterminate nature. Another specimen, supplied by Dr, Jacob from a cow suffering from some form or other of Garget, yielded—total solids, 11.7 per cent. ; fat, 2·5 ; non-fatty solids, 9·2 ; ash, 0·76 ; and the microscope revealed nothing abnormal. Such milk would have been passed as good milk by a public analyst, but at the same time the cow from which this specimen was taken had passed through the acute stage, when probably the milk was more altered. It is a coincidence of great importance, upon which Dr. Jacob would write, that when Diphtheria broke out at the Princess Mary's Home at Woking, this Garget existed in the farm which supplied the Home with milk. The chain of evidence connecting Garget with Diphtheria is at present altogether incomplete. Mr. Smee concluded : "Considering the universal employment of milk as an article of food by all classes of society, I have thought it desirable at once to bring under the notice of this Society my researches on Garget, because a thorough investigation of milk in disease would, I venture to believe, reveal many facts of importance to the health of the human subject. It is, however, an investigation that would be surrounded with great difficulties. It would require many observations to be made in different localities under varied circumstances, besides requiring the expenditure of much scientific skill and money. A thorough investigation would be far beyond the means of any private individuals, and perhaps beyond the resources even of our scientific societies ; and the subject promises, I think, to be one of sufficient importance to deserve inquiry by Government."

The PRESIDENT remarked that, even if time permitted, it would be difficult for the Society to discuss the novel questions so ably brought before them. Much valuable information might be gained by appointing a committee to investigate the nature of "Garget," as well as the chemical and microscopical characters of the milk secreted by the affected gland. The Brown Institution would afford facilities for such research, and he begged to nominate the following gentlemen to serve on such a committee :—Dr. Buchanan, Dr. Sanderson, Dr. Greenfield, Mr. Smee, and Dr. Coupland.

HIGHLAND AND AGRICULTURAL SOCIETY.

AT the Annual General Meeting of the Highland and Agricultural Society of Scotland, held on January 15th, Captain Tod, of Howden, as Chairman of the committee in charge of the Society's veterinary department, had reported that the Society's petition to her Majesty the Queen for a national charter for Scotland, empowering the Society to grant veterinary diplomas, had been refused. The committee, believing that the veterinary profession is opposed

to the Society's application, were recently reluctantly constrained to recommend to the directors that the Society's veterinary examinations should be suspended. Due provision will, however, be made for carrying on the examination of persons already admitted as students of the Society who may hereafter elect or claim to be examined by the Society's examiners, in preference to submitting to examinations by the Royal College of Veterinary Surgeons. These parties will also be admitted members of the Royal College on payment of certain fees, and without submitting to further examination. Captain Tod said: "I cannot conclude without recording that, in my opinion, justice has not been done to the Society. When lectures were established by the Society in 1823, the veterinary art was very imperfectly understood in Scotland. The establishment of the Edinburgh Veterinary School was the means of obviating this serious evil, and above 1,100 students have, during the last 55 years, passed the ordeal of a strict examination, conducted under the direction of the most eminent men of the medical faculty, and also of distinguished veterinary surgeons. These advantages have been secured to the public without having ever drawn upon it for assistance or support, the Society having never asked or received one farthing of public money on behalf of its veterinary department, but expended a large sum from its own funds. There are at present in Scotland no fewer than four universities qualified to confer degrees in medicine, and it was surely, therefore, not unreasonable to ask that a similar right should be granted to confer veterinary diplomas. Whether the suspension of the Society's examinations may turn out disadvantageous to Scotland and the veterinary profession remains to be proved: but under the circumstances I have now detailed, the directors considered it mpossible to continue to grant certificaties."

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THIS Association held its regular fortnightly meeting in the lecture-room of the College on December 5th, at the usual hour, the President, Principal McEachran, in the chair, with a full attendance of members.

Mr. J. J. MILES, of Charleston, Illinois, read a very instructive, interesting, and original paper on Ovariotomy, fully describing the reasons for its performance, as well as the details of the operation. One important object to be gained by the operation in cows is the perennial secretion of milk; and as the operation is attended with little or no danger in the hands of a skilful surgeon, Mr. Miles strongly recommends this fact to the notice of dairymen, that it has been successfully proved by Mon. Charlier, a veterinary surgeon, of France, that the aggregate amount of milk yielded in the year is nearly double in cows operated upon.

A very lively discussion followed, the majority of the members present agreeing with Mr. Miles, that much may be gained and very little incurred by the more general instructions of its practice in this country. The operation is attended with very beneficial results in the case of sows, making them easier fatted and greatly improving the quality of the meat.

Mr. M. S. BROWN, student, communicated a very interesting case of Paralysis of the Lips in a Horse, caused by halter-pulling, saying this affection, although apparently very simple, is really very difficult to treat but easy to diagnose, being characterized by a pendulous condition of the lips, the lower being the one most frequently involved. He maintained that no time should be lost in having such cases properly attended to.

At the next meeting Dr. BELL, Assistant House Surgeon at the General Hospital, and Professor in Materia Medica, will read a paper on Antiseptic Surgery.

Mr. P. CUMINS will communicate a case of Navicular disease.

The President was authorized to purchase as many new books for the ...e funds in the treasury would allow.

Jurisprudence.

(THE following case, which I extract from the columns of the *Stirling Reporter*, will, I trust, be deemed worthy of a corner in the VETERINARY JOURNAL, so that a permanent record may be made of a decision so important to veterinary surgeons who keep shoeing forges.

GEORGE MORGAN, F.R.C.V.S., Hon. Sec.
National Veterinary Benevolent and
Mutual Defence Society.)

STIRLING SHERIFF COURT.

INTERESTING CASES TO FARRIERS AND CARRIERS.

M'NICOL *v.* WAUGH.

This was an action for £45, being the price of a horse which was so injured that it had to be killed. The horse, which was a vicious one, was put in the "stocks" to be shod, and while there behaved in such an unruly manner that it fell with its back broken, or, as the pursuer alleges, while it was trying to rise in the stocks it pressed against the cross-bar which, it is further alleged, had been negligently left in by the servants of the defender. The pursuer is a horse-dealer in Glasgow, and the defender a veterinary surgeon in Stirling. The defender alleges that he was not told that the horse was vicious, at least he was not told that two unsuccessful attempts had been made to shoe the horse before it was brought to him, and generally that it was of such a vicious nature as to be beyond his or his servants' control, and that he was not responsible for the accident of its death. Proof of the facts was led, and the Sheriff after making avidzandum has issued the following interlocutor and note :—

Stirling, July 12th, 1878.—Having heard parties' procurators on the proof and whole process, and made avizandum : Find (1) that, on Saturday, 17th March last, defender, who is a blacksmith, received a horse, the property of the pursuer, and undertook to shoe him : (2) That said horse was rising five years old, had never been shoed, handled, or broken to harness, and was vicious and intractable : (3) That attempts had been made to shoe said horse by two different blacksmiths during the same week without success : (4) That it is not proved that pursuer made defender aware of this circumstance, but merely told him that the horse was "fashious :" (5) That defender's foreman and assistants attempted to shoe the said horse in the usual way without success : (6) That, accordingly, he was placed in the "stocks :" (7) That placing a horse in the "stocks" is the usual and proper method of controlling an intractable horse while he is being shoed : (8) That the "stocks" used in this instance were of the usual and common character, were in good order, and suitable for the purpose : (9) That, while in the "stocks" the said horse plunged violently and repeatedly, and that the canvas sling was broken by his struggles : (10) That said horse sustained injuries while in the "stocks," which made it necessary that he should be destroyed : (11) That it does not appear whether these injuries were the result of strains caused by severe muscular exertion, or were occasioned by the struggles of the horse to rise, but that it is proved that they were not the result of the fall of the horse to the ground after the breaking of the canvas sling : (12) That the defender and his servants displayed neither negligence nor want of skill in their treatment of said horse. In these circumstances, sustains the second plea in law stated for the defender, assoilzies him from the conclusions of the petition : Finds him entitled to expenses of process, allows an account thereof to be given in, and remits the same, when lodged to the auditor of court, to tax and report and decerns. (Signed) J. R. BUNTINE.

Note.—This seems to the Sheriff-Substitute a case in which it is not necessary for him to say much upon the evidence. It is clear that the horse was intractable and violent, and it is probable that many efforts had been made to shoe it, without success, before the two futile efforts made in Broomage and Falkirk. In these circumstances it was the duty of the pursuer to have mentioned to the defender that the horse had been in the "stocks" on a previous occasion, and that, even with their aid, the blacksmith had been unable to shoe him. This would have put defender thoroughly on his guard. But it does not appear that he had this information, although pursuer and Mr. W. Gilchrist both think that one of them mentioned to the foreman, Walls, that they had tried to get the horse shoed at Broomage and at Falkirk. The duty of the defender was to apply suitable machinery in good condition, and to show that his foreman and assistants used every reasonable care and skill. The Sheriff-Substitute thinks that it is clear on the proof that the machinery used by the defender was suitable, and was in good order, and that his servants displayed no want of skill or care. The most important point in this case is the breaking of the canvas sling. That sling was not used for the purpose of suspending the horse, but merely to prevent him throwing himself to the ground. The sling has been preserved by the defender, and was produced. It is proved that the canvas is in good order, and was suitable for its purpose. In the whole circumstances, the Sheriff-Substitute thinks that the defender has done everything that the law imposed upon him. The death of the horse was an unfortunate accident, for which no one is to blame, and the loss must fall upon the owner. (Intd.) J. R. B.

This case, it will be remembered, was decided in July last by Sheriff Buntine in favour of the defender, and on an appeal against that judgment Sheriff Gloag has just issued the following interlocutor and note :—

Edinburgh, 19th August, 1878.—The Sheriff having resumed consideration of the cause recalls the eleventh finding in fact in the Interlocutor of the Sherift-Substitute, 12th July, 1878, *quod ultra* adheres to the said interlocutor. Finds the defender entitled to additional expenses, appoints an account thereof to be added to the account of the defender's expenses already allowed to be given in, and remits the same to the auditor of court to tax and report and decerns. (Signed) W. E. GLOAG.

Note.—The Sheriff has recalled the eleventh finding in fact in the Sheriff-Substitute's interlocutor, because he does not think it essential to the judgment in favour of the defender, and because he has not been able to adopt the proposition that it is proved that the injury to the horse was not the result of the fall after the canvas band broke. The injury occurred just about the time when the band broke, and the Sherift does not think that the evidence warrants any very confident opinion as to whether it was caused by the violent plunging of the horse before it fell, or by his fall, or by his efforts to rise after he fell. The whole thing occurred within a very short time, and it does not seem wonderful that the precise minute of time when the injury happened could not be very exactly observed. The Sheriff is, however, inclined to the opinion that probably the injuries would not have happened had the band not given way, and that it may with reasonable probability, though not with certainty, be referred to the breaking of the band. He could hardly have assoilzied the defender on the ground that the injury was unconnected with the breaking of the band. Had the horse not been extremely violent the Sheriff would have felt great difficulty in deciding for the defender, and in that case he might probably have been of opinion that the band was defective and that this was the fault of the defender and that he was liable. The extreme violence of the horse, however, makes all the difference, for the band may have been burst in con-

sequence, although it was perfectly sound, and the Sheriff adopts the opinion of the Sheriff-Substitute that it was proved to have been so. The point no doubt is debateable; but he thinks that that is the fair result of the whole evidence. The Sheriff had not the advantage which the Sheriff-Substitute had of seeing the band. The Sheriff also holds that the pursuer has not shown that he sufficiently warned the defender of the character of the horse, and he thinks that his failure to do so interposes a great obstacle to his success in the action. The Sheriff thinks that the fair result of the proof is that the death of the horse was caused mainly by accident, although the accident was a very common one. He is unable to find that any blame in the matter attaches to the defender, but he thinks the pursuer not wholly free from blame in having neglected, as the Sheriff thinks he did, to put the defender sufficiently on his guard. The cases of Binning *v.* Bean, 16th July, 1679, M. 100, 79, Marquis *v.* Ritchie, 11th June, 1823, 2 S.D. 386, and Pullars *v.* Walker, 30th July, 1850, 20 D. 1238, quoted by the pursuer's procuraior, do not appear to the Sheriff to be in point. They were cases when horses suffered injury when on hire. But the Sheriff does not see his way to apply these cases to the present, which belongs to a totally different legal category. This is a case where the pursuer hires the skill and labour of the defender, and where, in the course of the operations which the defender undertook, the injuries occurred. It seems manifest that the only grounds on which the defender could be held liable would be his negligence or such want of skill as in law amounts to *culpa*, agreeably to the maxim *imperitia culpae annumeratae*, and if this had been a jury trial, there is no reason to doubt that the pursuer must have put in issue the fault or want of skill of the defender. If a coachman is employed, and the carriage he drives be overturned, or if the services of a hired surgeon or doctor, he could be made liable only on the ground of negligence or of want of skill. Their vocations are subject to interference of accident, and they cannot be held to guarantee success. No doubt there are many cases in which the mere fact of injury may be *prima facie* proof of fault, as would have been the case if the breaking of the band did not naturally fall to be accounted for by the violence of the horse, there are many cases in which the failure of a tradesman or a professional man to do what he undertakes cannot possibly be attributed to anything but his fault, and there may be cases in which fault must be regarded as the more probable cause of injury; but the present case does not appear to the Sheriff to fall within these classes. The case of Hinshaw *v.* Adam, July, 1870, 8 M'P. 933 was quoted for the pursuer, and it certainly appears to have a nearer resemblance to this case than the other authorities quoted. There finishers were held liable for injury to goods which they had undertaken to calendor. That case regarded an operation to certain goods involving a well-understood risk of injury, and the defenders seem to have been held to have undertaken that risk. But the Sheriff thinks that case differs from the present, where so much depended on what was to a large extent capricious and incapable of being foreseen—namely, the extremely unruly behaviour of the horse. The horse was not hurt by the operation of shoeing, but by an accident which happened while that operation was being performed or attempted. Besides, had it appeared in the case of Hinshaw that the goods were defective within the knowledge of the pursuers, that the defects were latent and had been pointed out to the defenders, and had probably given rise to the injury, there is reason to think that the defenders might have escaped liability. Now, that is the nature of the present case if the view of the evidence taken by the Sheriff-Substitute and Sheriff be correct. The case of Gloar *v.* the Western Railway Company, 28th May, 1872, L.R.C., p. 665, referred to in the argument for the defender, appears much in point. In that case a railway company who had undertaken the carriage of

a bullock were held not liable in damages on account of its escape from the truck in which it was put, and death, it having been proved that the carriage were sufficient for ordinary purposes, that no negligence was chargeable against the railway servants, and that the escape and death of the bullock were due to the intractable character. On the whole, though the Sheriff feels the case to be narrow and difficult, both as regards the evidence and the law, he has formed a distinct opinion in accordance with that of the Sheriff-Substitute. (Intd.) W. E. G.

Obituary.

THE following deaths have been reported to the Registrar of the Royal College of Veterinary Surgeons during the past month, by members of the profession resident in the localities where the deceased have been in practice :—

		Diploma dated.
Mr. Thomas Duncalf late	Newport, Salop . .	Nov. 22, 1831.
„ Michael P. Dolan „	Cashel, Tipperary .	April 15, 1869.
„ G. Doyle „	Kildare . . .	July 4, 1837.
„ Jas. Spencer „	Stoke-Ferry, Norfolk .	April 6, 1837.
„ Wm. Howlett „	Fakenham . . .	July 28, 1828.
„ Samuel Brown „	Melton Mowbray. .	May 15, 1823.
„ Geo. Stowe „	Warwick . . .	June 4, 1845.
„ Robert Stewart „	London . . .	April, 1870.

Also, in the 53rd year of his age, Mr. Gilbert Heyes, F.R.C.V.S., Hatton Garden, Liverpool. His diploma bears date May 1, 1856.

Notes and News.

CATTLE PLAGUE.—The continued spread of the Cattle Plague in Prussia is causing grave anxiety. The Berlin papers state that the disease "has assumed enormous dimensions." Within a fortnight of its first appearance no less than twenty-six districts were declared infected, and many hundreds of cattle, together with some few sheep and goats, were compulsorily slaughtered. At Stallupönen, where the first outbreak occurred, more than a hundred beasts were shot in the course of a week, and as it was found impossible to dig graves for the carcases, they were thrown into a disused gravel pit on the outskirts of the town, and then covered over with earth. The farmyards under sanitary supervision are guarded by the military, and a picket of soldiers is constantly on duty at the gravel pit to prevent any attempt to disinter the bodies. The little town itself is sadly disturbed by this untoward occurrence, and many families whose members have been in contact with suspected cattle are absolutely obliged to confine themselves to their houses for fear of spreading the contagion. Over a considerable length of the frontier the introduction is absolutely forbidden of cattle of any kind (except horses), of any parts or products of ruminant animals, whether fresh or dry, except butter, milk, and cheese ; of all manure, fodder, straw, and all stable utensils or harness that have been used ; of manufactured wool and hair, and of worn clothing and rags. Persons whose business brings them in contact with cattle, such as butchers, cattle dealers, and their servants, may only cross the

frontier at one of two stated places, and at these must be subjected to measures of disinfection under the supervision of the veterinary surgeon on duty. Altogether, from the commencement of the disease on the Polish frontier to the issue of the last report, the losses have included 1,862 head of cattle, 1,025 sheep, and 238 goats. It may be remarked that the number of sheep and goats slaughtered is not to be taken as the number attacked with the disease. On the contrary, in most cases the animals are healthy, but they are slaughtered in consequence of being on premises in which diseased cattle are or have been standing. The introduction of the disease has been clearly traced to some Russian cattle smuggled across the border in defiance of existing sanitary regulations, and public indignation is loud in condemning the dealers who, in pursuit of their own selfish ends, have brought such a calamity upon their country. A rigid investigation has been made into this matter, with the result of discovering an active connection with the smugglers in quarters least suspected, and a very large number of arrests have already been ordered. Complaints are also rife that, though the law provides penalties up to five years' imprisonment for offenders convicted of contravening the regulations against cattle smuggling, the heaviest punishment as yet inflicted has not exceeded three months' confinement, and it is argued that such mistaken lenity has done much to encourage the continuance of the system, when the adoption of sterner measures might have effectually repressed it. The profits in this smuggling business are so enormous that the risk of a possible three months' loss of liberty is readily run. A suggestion has been thrown out that as the capitalist engaged in this nefarious business must be assisted by humbler companions, who get but a few shillings and a little liquor for their services, it might be advisible to tempt these latter to turn informers by offering a reward of five pounds or so on conviction of the prime offenders in respect of each beast that can be proved to have been smuggled in. As a first unwelcome effect of the outbreak, Belgium has absolutely prohibited the importation of beasts of German origin within her frontier, as also their transit through her territory. Austria has also been invaded, and has prohibited the importation of cattle from Roumania on account of the prevalence of Cattle Plague in that country. Rinderpest is reported to be very prevalent in the Presidency of Madras, where many cattle are kept.

KHARKOFF VETERINARY SCHOOL.—We learn that this Russian School has been broken up, in consequence of a semi-political *émeute* among the students, and which has become extended to those of several Muscovite Universities.

FRENCH ARMY HORSES.—The number of horses required for the French army on a war footing is, according to the *Journal des Sciences Militaires*, 210,700, distributed as follows:—Infantry, 10,000; Cavalry, 90,000; Artillery, 50,000; Engineers, 900; Transport, 45,300; Gendarmerie and non-regimental troops, 10,000; officers and officials, 4,500. As during peace only about 113,000 horses are available, *circa* 99,000 have to be provided, this number being supplemented to a great extent, as far as draught animals are concerned, by mules.

VETERINARY SCIENCE IN FRANCE AND BELGIUM.—Medical Universities having been established at Lyons and Toulouse, Professor Chauveau, Director of the Lyons Veterinary School, has been elected to the chair of Comparative Pathology in the first-named University, and Professor Toussaint, of the Toulouse Veterinary School, to the chair of Physiology in the University of that city. Professor Wehenkel, of the Brussels Veterinary School, fills the chairs of Morbid Anatomy and Comparative Pathology in the Brussels University.

Correspondence, etc.

PRIVATE PRACTITIONERS AND THE ARMY VETERINARY DEPARTMENT.

To the Editor of the VETERINARY JOURNAL.

DEAR MR. EDITOR,—It was my intention to have allowed my letter which was written upon this subject to rest; but I have received a letter this week from a member of the profession who resides in England, approving of the remarks made by me, and at the same time declaring that he had been attending some army horses very recently, and had been paid only two-thirds of his claim. It is high time that some understanding should be arrived at between the Veterinary Department and private practitioners. It appears to me that the question assumes a serious character now, because the system of taxing, or cutting down, has become general, if not universal. I, for one, can positively assert that when cavalry detachments or squadrons are located in a town, the supply of medicine in stock is of the most meagre and absurd description. This remark does not apply to the Ordnance Department, as a veterinary surgeon is usually attached, and a pharmacy connected with the barracks. It is so here! Should the Royal Artillery veterinary surgeon be absent on leave, and he has named a private practitioner to act as *locum tenens*, and his attendance is required at the *cavalry* barracks, the Artillery veterinary surgeon must recoup his friend, the private veterinary surgeon, for all such medicines which may be supplied to the troop horses of a cavalry squadron. This, to my mind, is "*hard lines*," and it is still harder lines when the private veterinary surgeon has to supply the needful, and pay car-hire when making visits. This has happened to myself occasionally. The matter may be looked upon as a frivolous one, and it passes out of the mind of the Army veterinary surgeon, especially as his removal now and then takes place hurriedly; and the deputy does not think it worth his while to make a formal application for medicines supplied, or shillings paid to "jarvies." As a rule, a Government appointment is worth obtaining, but if an unfortunate individual happens to act the friend to a professional brother, the chances are the friend is a loser. It may be questioned whether my remarks are well founded; but it must be distinctly understood that I refer especially to cavalry, when the troop horses are located in a town having a "battery," and its veterinary surgeon attached.

There is almost as much difficulty in getting money out of the Government purse as there would be in bleeding a turnip! I am of opinion that the Veterinary Department should be liberal to private practitioners, and it would be a compliment to its own staff. As things are now conducted, I think the profession is not appreciated as it deserves by the head of the Department.

When a Poor-law doctor goes away on leave, his deputy is paid at the rate of three guineas a week for his services, while the medicine required is found by the Union. I do not mean to compare horse-doctors with those of the human family, but I am free to think there is but small difference between them as *men*, and I could cite many instances where the horse-doctor is the superior in every sense. However, I have been digressing. I have stated some facts which are discreditable to the Veterinary Department, and the sooner a reform takes place, the better.

Yours faithfully,

R. H. DYER, M.R.C.V.S.

Limerick, *Dec. 11th*, 1878.

PARTURIENT APOPLEXY.

To the Editor of the VETERINARY JOURNAL.

SIR,—In an essay by Mr. Gerrard on "Parturient Apoplexy," read before the Liverpool Veterinary Medical Association, he says that some members and a fellow of the R.C.V.S. recommend not milking the cow for a day or two after calving, they considering the disease a result of weakness.

I, for one, certainly recommend the udder not to be emptied, but always advise that the calf be allowed to remain on the cow (a fact Mr. Gerrard seems to forget), or that the udder be partially relieved.

This practice is not due to such an absurd theory as he charges us with, viz., debility; neither I, nor any M.R.C.V.S. that I know of, who adopt this course, have ever said such a thing.

Before Mr. Gerrard again accuses any member of ignorance, I hope he will be more careful that what he states is correct.

I am, Sir,

Yours truly,

J. MACKINDER, F.R.C.V.S.

Peterborough, *January 14th.*

OUR FEES.—HONEST COMPETITION.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—As a practitioner in the vicinity of London, and who in all probability may be affected by the practices described by Mr. Thomas Moore in your last and former journals, as having taken place at what is sometimes termed the *Alma Mater* of the profession, viz., the Royal Veterinary College, London, you may perhaps permit me to state my opinion regarding these practices, as also my experience of the *Alma Mater*, and its so-called professors.

The practices described by Mr. Moore, and which have not even been denied, far less disproved, by any one responsible for them, are simply detestable, and degrading in the extreme to all those who practise or sanction them. This establishment is neither more nor less than a huge co-operative horse-doctoring store, where the wealthy but pecunious are privileged to deal—not on the principle of honest competition, but on the lowest and meanest propensity of human nature, the desire to appear great at a cheap rate. It says little for the courage of the Metropolitan practitioners, that this lumbering leviathan of a horse-doctoring store should have been allowed to exist on such conditions, and for so long, in their midst. Surely Mr. Moore and his "several members" will not allow this subject to drop, until they have brought the moral force of the profession to bear upon the upholders and perpetuators of such an unbusiness and abominable system.

My personal experience is rather different to that recorded by Mr. Moore, or as shadowed forth by the professors in their advertisements in their own organ, the *Veterinarian*. It is this. Having been engaged in a law case which went against the weight of evidence, the owner of the animal in question requested me to take it to the Royal Veterinary College—there is something magical in the word *Royal*, especially in London—for an opinion as to its soundness, so as to be able to procure a new trial. I did so. Before any of the professors would give an opinion on the point in dispute, Professor Pritchard demanded a guarantee from me, or my employer, that in the event of a new trial being procured, we would pay him no less a sum than twenty-five guineas when we subpœnaed him. As I could give no such promise, I had to take the animal home again without even obtaining an opinion, although I offered to pay him the ordinary fee of one guinea for it.

Now, Sir, upon what principles of morality—commercial or otherwise—can you explain such inconsistent proceedings? Surely, Sir, I was entitled to an opinion by paying for it. But it seems not so, according to their code of morals. Yet they do not scruple to resort to the discourteous and unprofessional conduct recorded by Mr. Moore.

There is not another establishment conducted on the same principles in all the Metropolis or anywhere else; and I think the profession as a whole, but more especially the Metropolitan members, have a right to demand some explanation of such conduct, and make a move towards the suppression of such practices.

If by securing subscriptions for the support of the institution from the wealthy, in order to treat the animals of the poor *gratis*, I could understand and respect their motives; but that they should solicit subscriptions in order that they may secure business on such terms, is, in my opinion, humiliating to their manhood and derogatory to the dignity of the profession.

You, Sir, are sometimes, as I think, rather severe on some needy brother who ventures beyond the artificial boundary of professional etiquette, by hanging out his card at the "Cabman's Rest" or "The Malt Shovel," announcing that he will assist gentlemen in the purchase of horses, &c., &c., but such conduct sinks into insignificance when compared with that recorded by Mr. Moore, and regarding which you are silent.*

Nor is this the only count in the indictment of unprofessional practices that the profession can bring against the professional staff at the R.V.C.

It is generally considered that professors are men of culture and large mental calibre, capable of taking the lead in all matter pertaining to the profession—holding aloft the banner of science, and pointing the way to us plodding practitioners. Instead of this, we find them actually writing down the profession to the level of the ignorant and the vulgar.

Not long ago, I received a circular from them requesting me to purchase what they were pleased to designate an "Encyclopædia of Practical Receipts," to inform all and sundry how to make all kinds of oils, pills, lotions, liniments, balsams, drinks, ointments, and even soups and blacking!

Think, Sir, of a whole staff of Veterinary Professors being engaged in such an undertaking—writing down the science to the million, on the *ad captandum vulgus* style.

Perhaps, Sir, it is on the principle that an educated man "*rises to simplicity*," and that it is only the pedant and the fool who need to cover their ignorance with the jargon of science and the schools. Whatever the occasion, or on whatever principle they proceed, it is, to my mind, exceedingly unprofessional, and not quite calculated to inspire us with respect for their ability, or esteem them for their labours in the interest of science.

I trust Mr. Moore will not fail to convene his "*several members*," so that united action may be taken on this matter, and have it brought before the profession at its annual meeting, in the shape of a vote of censure, as I should judge we can do under the Supplemental Charter, or some such procedure, to mark its disapproval of such conduct.

I am, Sir, yours faithfully,

JOHN GERRARD, M.R.C.V.S.

Romford, Essex.

* If our correspondent will refer to a certain leading article in the first volume of this journal, he will discover that he is mistaken as to our silence. We have always held the opinion that the system on which the Royal Veterinary College is maintained is most discreditable, and such as would not be tolerated for an hour if adopted by any medical school. It is not only unprofessional in the extreme sense of the term, but it is derogatory to veterinary science, most injurious to metropolitan and suburban practitioners, its own *alumni*, and is in no way whatever beneficial to the students, but rather a disadvantage to them.—ED. *V. J.*

To the Editor of the VETERINARY JOURNAL.

SIR,—I am not in any way grieved that Mr. Moore is not known to me in the flesh, and whatever may be his ultra-professional qualifications, I should be glad to know that two pages of your next number are not to be occupied by illustrations of the scanty progress Mr. Moore seems to have made in the principles of logic and other sciences which more immediately concern him. Without admiring Mr. Moore's mental deportment, I venture to think with him, and all the world besides, that space in your journal, or in any other, "is not wasted when it contains something of interest"; and still further, that the subject chosen by Mr. Moore is one of paramount importance, not only to the veterinary profession, but to all others. Nothing is so much to be desired as remunerative fees, and nothing is so much to be abhorred as "dishonest competition." It may be laid down, as a truism, that ability will always command the former, and that the latter will sooner or later meet its just reward. No one, I venture to say, but a profligate noodle, totally devoid of all moral courage and business capacity, would play the ludicrous part portrayed by Mr. Moore in his canine episode. Nor can I think that Mr. Moore himself will admit having been guilty of the quixotic performance he depicts in the November number of your journal. In what frame of mind Mr. Moore conceived the possibility of even the humblest member of our profession spending an hour with an antiquated dame, affected with canine madness, and entertaining her during that time with awkward spasmodic smiles, and her dogs with blacking, it is difficult to comprehend. Leaving dogs and dog-doctors, we are entertained with a rambling effusion regarding the Royal Veterinary College and its professors. Mr. Moore complains that the College has an infirmary, and that the College exercises its rights to exist. He was probably once a student at this same institution, and while thus acquiring the means to live, he shared with subtle equanimity and unblushing zest the very plunder which he now charges the College with exacting from the practitioners of London. For this privilege Mr. Moore's big-hearted gratitude and charity would banish myself and all future generations of students from the confines of London, to seek the luxury he has acquired in less awkward times than these, wherever and at whatever cost we may. The privileges offered to subscribers of the Royal Veterinary College are necessary to the life of the institute as a teaching school, and with occasional crack-brained exceptions the practitioners of London have always displayed a spirit of generosity and self-denial worthy of the cause they espouse. The educational department of our profession is, and must ever be, to a greater or less extent, a tax on those who follow it—just as the hospitals of London are a tax on medical practitioners; and it is gratifying to know that the impost is borne with grace and liberality, and that the sore-headed growl which Mr. Moore has initiated is not likely to be taken up by right-thinking men. Why Mr. Moore should feel hurt because a poor professor thinks proper to occupy his own time in his own way is not a little mysterious! Perhaps, if Mr. Moore were to practice the early-morning movement he complains of in the indefatigable professor there might be no necessity for his growl, and the firms who now fail to recognize his worth would, to say the least, admire his industry. I have always found that when gentlemen can have satisfaction from private practitioners, they are glad to have their horses under their own eye, and when it is necessary to send them to the College, the cases are generally such as no veterinary surgeon would care to retain. "None of the money of the College," says this illustrious gentleman, "goes to benefit the profession." I know that I am appearing ridiculous in noticing so obvious a mis-statement, but my profound sympathy with the man who indulges such thoughtlessness compels me to remind him

that the Royal Veterinary College is conducted by a body of gentlemen, whose only aim is, and has been for years, to benefit the profession; and to represent them as otherwise disposed is a base libel. The Governors of the Royal Veterinary College have declared, by every act, their deep anxiety for the welfare of the profession, and this is most strikingly illustrated by their resolve to admit into the College only those who have a knowledge of French, and are otherwise men of culture. It is due to them to say that in this direction they have set an example which our friends in the North should lose no time in following. It is, indeed, the duty of the Royal College of Veterinary Surgeons to insist on a uniform standard of education for all the schools, and this subject should be raised in the Council Chamber in May next. As a student, I protest against the loose regulation that permits French to be demanded of me, while no such qualification is required at the Scotch colleges. To put the mildest construction on Mr. Moore's letter to Professor Axe, I should say that it is about as windy an effusion, and displays as little fine feeling, thoughtfulness, and intelligence, as the letter in which it is embodied. Professor Axe evidently knows how to deal with such tender epistles. I must, however, say that if his conduct is not mis-stated, an explanation is due from him. In addressing Professor Axe, Mr. Moore says: "You must be aware that it is unlawful to remove an animal affected with a contagious disease." No doubt this was news to Professor Axe, as it was to myself. The remark is peculiarly characteristic of Mr. Moore's reckless statements, and will require to be very materially qualified before it can be admitted. I must apologize to you, sir, for the general tenor of this letter, and rely for its insertion on the authority of Mr. Moore, who has said that "space is not lost which contains anything of interest.'

I am, yours obediently,

"A STUDENT."

THE ARMY VETERINARY DEPARTMENT.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—By the new Veterinary Warrant, which came out in May last, a number of veterinary surgeons in the department have, I think, met with very hard treatment. I speak of those who entered the service under the old warrant, and are not First Class Veterinary Surgeons, though they have more than five years' service; indeed, I think I might with justice include all those on the old list.

Formerly a veterinary surgeon was *eligible* for promotion after five years' service, and it generally came to his turn after nine or perhaps ten years. Now he is only *eligible* after twelve years; so who can say when the desired step may come? Probably after sixteen or eighteen years. As I read the warrant, these officers come under clause 15, but *not* under clause 8; so that this long looked-for warrant, which we all hoped so much from, has simply put back the promotion of the *majority* of the department for *seven* years. For this hardship we are conceded sixpence a day.

In my humble opinion, the officers of the department throughout are *most wretchedly* paid; but compared with the medical department, our pay is simply ridiculous. I give you a case which came under my own observation in India, some months ago:—

A cavalry regiment had a strength of men 461, of horses 406. In charge of the men were *three* surgeons-major. The senior drew 1,050 rupees per month, with allowance for three horses. The other two *each* drew 789 rupees per month, and allowance for three horses *each*. These officers were exempt from mess and band subscriptions, and only paid for their dinner when they dined at mess. In charge of the horses was *one* veterinary surgeon, whose pay was 395 rupees per month. *All horse allowance was*

supposed to be included in this miserable pittance. This officer paid to mess and band funds, as a lieutenant, and, as a bachelor, paid for his dinner nightly whether he dined or not.

Is this either fair or just? Of course, we are a smaller and weaker department than the medical, but we are not a bit less useful or necessary. Why, then, should we be treated so differently? If we are too weak or indifferent to fight for ourselves, will not some one *really* take up our cause, and fight for us, as the medical officers, or their friends, fought for their department?

I am, Sir, yours faithfully,

"ONE OF THE SUFFERERS."

To the Editor of the VETERINARY JOURNAL.

SIR,—I am sure the thanks of the Army Veterinary Department are due to you for the editorial remarks contained in your journal for January, as also to your correspondent "Philolethes" for his letter on service in India. I would ask a small space in which to bear out one of the statements contained in your correspondent's letter, viz., "that the pay given in India to veterinary surgeons under the rank of first-class is a miserable pittance."

Take, for example, a veterinary surgeon joining the army under the provisions of the present warrant. Whilst on home service he will receive annually—pay, £250; forage allowance computed at £63 17s. 6d.; quarters, fuel, and lights, equivalent to £38; and, lastly, the services of two soldier servants, estimated at £30.* The whole amounting to £381 17s. 6d. From the date of a veterinary surgeon's arrival in India, he is placed on consolidated pay and allowances—377-8 rupees a month, or 4,530 rupees a year. If this sum be reduced to English currency for the purpose of comparison, at the present rate of exchange (*i.e.*, 1s. 7d. per rupee) it amounts to £358 12s. 6d., or £23 5s. less than he was in receipt of when on the home establishment. Out of the above sum he is required to forage his horses, rent his quarters, pay his servants, and meet all the expenses incidental to Indian life, as well as all the heavy charges attendant upon an almost incessant moving from one station to another. Add to these the risks to health, and the occasional necessary change to a hill station, and it will surprise no one that unless he lives a life of constant self-denial, and is the possessor of the most frugal habits, it is not very long before he makes the acquaintance of the regimental "shroff" or native banker, who will let the "sahib" have any sum of money he may require on personal security alone, always providing he is prepared to pay from 20 to 25 per cent. interest upon it. This is no romance. All other branches of Her Majesty's Service are liberally remunerated for their services; and a campaign, to other departments, means a field of enterprises, where honours and distinctions may be fairly reaped, and where all may compete alike in obtaining those more substantial rewards which follow successful efforts in any sphere. Now, sir, can a single instance be pointed out in which honours, distinctions or rewards, however trivial, have ever been conferred on veterinary officers, even though good and meritorious services in the field were acknowledged to have been rendered; It will probably be found that the highest distinction ever

* These sums are necessarily proximate only, as the amounts vary at different stations. Forage allowance, for instance, ranges from 1s. 6d. to 1s. 11d. a day for each horse, and is calculated at 1s. 9d. Government quarters in India, when available, are charged at the rate of forty rupees a month—£48 a year. The sum given to officers by the home authorities in lieu of a soldier servant, is 1s. a day—£30 a year for two servants.

attained has been "mentioned in despatches," and in no single instance have the honours and rewards so freely scattered through the ranks of other departments ever reached our own.

There is, therefore, no need for an expression of wonder that veterinary surgeons, when called upon to volunteer for service in India, prefer to remain at home, and naturally shrink from entering a field where they are readily permitted to share all the risks and disadvantages, but under no circumstances allowed even to hope for ulterior reward. I venture to think that if it could be shown in other branches of Her Majesty's Service, as it can in the junior ranks of the veterinary, that "volunteering for India" is only another name for "financial difficulty," there might possibly be less enthusiasm manifest amongst them to participate in the task of upholding the honour, glory, and majesty of England.

I remain, Sir,

Yours obediently,

"VETULA AVIS."

PROMOTION IN THE ARMY VETERINARY DEPARTMENT.

To the Editor of the VETERINARY JOURNAL.

SIR,—As you have been good enough to give space in your excellent journal for the ventilation of the army veterinary surgeons' grievances, will you kindly favour me by inserting the following remiarks :—

From January 1st, 1797, the date of the introduction of veterinary surgeons into the Army, till the warrant of 1859 was promulgated—a period of sixty-two years—these officers enjoyed no higher rank than that of lieutenant; and until this date they were all regimental officers, receiving increase of pay at stated periods of service. The warrant of 1859 reformed the department; in fact, it may be said to have created it, as the veterinary surgeons could hardly have constituted a department till its promulgation. This warrant established three grades, viz., veterinary surgeon ranking with lieutenant; 1st class veterinary surgeon ranking with captain; and staff veterinary surgeon ranking with major. The veterinary surgeon was made eligible for promotion to 1st class on the completion of five years' full-pay service, and the 1st class veterinary surgeon became eligible for promotion to Staff Veterinary Surgeon after the completion of fifteen years' full-pay service. But although this warrant was liberal in giving eligibility for promotion at these respective periods, it was so framed (the numbers in each grade being limited to six staff, one-third of the remainder 1st class, and the rest veterinary surgeons, the total number of the department being about 120 officers), that few could realise their promotion till many years after becoming eligible; and the working of the warrant proved unsatisfactory, excepting for those who were fortunate enough to find themselves at the top of the list when it came into operation. The six staff appointments were the only ones that were made remunerative (these, in addition to being well paid, were worth about £200 per annum each in allowances), and it was naturally hoped at the time of their establishment that they would be held for a limited period only, and that every officer would have an opportunity of reaching the rank from which he could retire with a fair pecuniary allowance. It was, however, soon found that these advantages would not be realised by any but a select few, and that the 1859 warrant, though a considerable improvement on the previous one, was framed principally in the interests of the seniors.

Since the rank of Staff Veterinary Surgeon was created in 1859—now nearly 20 years ago—promotion to this grade has been at the rate of barely

half a step a year (the senior at present has held his appointment for nearly eighteen years), so that if the warrant had continued in force, but very few officers would have stood the remotest chance of obtaining the rank of major.

Promotion to 1st class was more favourable ; but although the veterinary surgeon was eligible for this step after five years' full pay service, he did not get promotion till on an average of 10½ years' service ; the average number of steps to this rank being about four per annum. Promotion was not always given to the seniors, *but to those whom the Principal Veterinary Surgeon thought fit to recommend*, which was of course very unsatisfactory, as many, for no fault of their own, were passed over by juniors. If this state of things had continued, the junior Veterinary Surgeon who joined under the 1859 warrant, and who is sixty-eight places from the top of his list, would not have received his promotion to 1st class till about his eighteenth year of service.

The prospects of the *juniors* being so far from bright or encouraging, is imagined to have been the *sole* cause of the authorities deeming it expedient to make a change ; consequently, with the intention of improving *their* position, it is concluded that the 1878 warrant was promulgated. Now let us see what it has done towards that object—1. What has the new warrant done for the Inspecting Veterinary Surgeon (staff and inspecting are synonymous terms) ? It has made a most substantial addition to his effective and non-effective pay, which is so much in his favour, compared with the additions of pay made to the other ranks, that evil-minded persons, and those who know nothing about the manner of the hatching of Royal Warrants, say that the seniors framed and incubated it themselves ; but of course better informed people know that such was not the case. The following table shows the decimal increase of pay given by the new warrant to the three ranks :—

RANK.	ON THE FULL PAY.	ON THE RETIRED PAY.
Inspecting V. S.	Maximum ·304 average ·175	Maximum ·369 average ·315
1st Class V. S.	„ ·2 „ ·093	„ ·185 „ ·095
Veterinary Surgeon	„ ·115 „ ·044	„ nil „ nil

2. What has the new warrant done for the 1st class veterinary surgeon ? It has given him a slight increase of pay and the right to retire, after twenty years' service on 9s. per diem, or 1s. per diem more than the 1854 warrant (this was cancelled in 1859) gave a veterinary surgeon who had served five years abroad, after the same period of service. This is not very liberal, since the majority of veterinary surgeons now spend half their time on foreign service, and 8s. in 1854 was certainly worth as much as 9s. at the present time. His promotion is retarded, in consequence of greater inducements having been given to the Inspecting Veterinary Surgeon to remain on full pay till he becomes disqualified by age ; the maximum full retired pay of this rank not being attained till after thirty years' full-pay service ; whereas under the old warrant it was received after twenty-five years' service.

3. What has the new warrant done for the veterinary surgeon ? It has given him a very slight increase of pay. It compels him to serve seven years longer than the 1859 warrant required, before making him eligible for promotion to 1st class, and then it is not a *sine quâ non* that he gets promo-

tion. If serving in India after the time he would have been promoted under the old warrant, he now loses £175 per annum for every year that his promotion is withheld, that sum representing the difference between captains' and subalterns' allowances in that country. It has deprived him of the privilege of keeping two horses at the public expense, when disposed to do so; as the new warrant allows forage only for the number of horses considered necessary by the authorities for the performance of his duties. So that in many cases the veterinary surgeon who has hitherto kept two horses, and who still keeps them, will suffer the loss of 1s. 10d. per diem, unless it should so happen that two horses are considered necessary for the performance of his duties, and the veterinary surgeon so situated is 1s. 4d. per diem less paid than he was under the old regulations.

4. What are the veterinary surgeon's prospects of promotion to Inspecting Veterinary Surgeon? The average rate of promotion to this rank for the next 23 years will be 51 steps, or at the rate of $2\frac{4}{23}$ steps per annum; or if these officers are compelled to retire at 50 years, instead of 55 years, it will be 51 steps in 18 years, or at the rate of $2\frac{5}{6}$ steps a year. So that if all the 51 officers die or retire 5 years before they will be compelled to retire under the present regulations, the position of the juniors as regards promotion would be very little improved; even if three steps a year occur, the junior 1st class officer will have to wait 15 years before his turn comes, and he will then have 26 years' service.

The new warrant, therefore, cannot be said to have fulfilled the object which it is imagined it had in view. The Treasury has, undoubtedly, been liberal in granting so large a sum (nearly £3,000 per annum) to the department; but all who have considered the subject must agree that the distribution of this sum amongst the three grades of veterinary surgeons has not been quite equitable. If the distribution had been fairly made throughout the three grades, and promotion insured at stated periods, the great dissatisfaction which the provisions of the warrant appear to have occasioned, would not have resulted.

If the warrant of 1859 had remained in operation, with the provision that all officers should be promoted unconditionally at the periods of service at which that warrant made them eligible for such promotion (the promotion to Inspecting Veterinary Surgeon not in all cases to have necessitated removal from regimental duties), with the rates of pay allowed therein, it would, undoubtedly, have given satisfaction to all officers in the department, with the exception of those few who could have gained nothing by such a change.

The remedy for removing the dissatisfaction that now exists is, to give unconditional promotion to 1st class at not later than ten years' service, and the relative rank of major at not later than twenty years' service, with a fair increase of pay; the latter promotion not to necessitate removal from executive duties. Further, to make it compulsory that all officers shall pass the Fellowship Examination of the Royal College of Veterinary Surgeons before they are appointed Inspecting Veterinary Surgeons, which would insure their professional efficiency, and be a stimulus to competition for these very remunerative appointments. Trusting you will forgive my trespassing on your space at such length.

Yours obediently,

"FINEM RESPICE."

MILITARY AND CIVILIAN VETERINARY SURGEONS.

To the Editor of the VETERINARY JOURNAL.

SIR,—The following editorial paragraph appeared in a prominent position in the leading military journal, *The Army and Navy Gazette*, on the 7th

December instant :—"As we stated last week, a number of senior veterinary officers are required for service in India ; but as yet only one has volunteered, as it is said, and with perfect justice, that there is absolutely nothing to induce a veterinary officer to leave his wife and family and undertake duties in the discharge of which he may find his constitution ruined and himself unfitted for further service. There are neither promotions, distinguished service rewards, nor honours to be gained. Under the circumstances it is not, perhaps, to be wondered at that the head of the Department expresses his belief that it will be perfectly hopeless to look for volunteers from among the senior members."

This is not the first time by very many that the above-mentioned journal has spoken on behalf of military veterinary surgeons, who owe it a deep debt of gratitude for its persevering advocacy of their neglected claims. The above extract is pregnant with meaning, and fully explains why veterinary officers of standing shrink from Indian service ; for no matter how meritorious or how advantageous to the country their services may be, it seems as if they were almost systematically ignored. Why does this appear to be the case, and what is the reason ? Veterinary surgeons have never heard a reason, and cannot imagine one. Can it be that it is a remnant of the old ideas, when knowledge and intellect occupied a secondary place, and when it was the fashion to look down upon some members of the regimental staff—which is really the *brain* and, consequently, the chief factor in the efficiency and well-being of a regiment? For the benefit of the uninitiated, it may be explained that the regimental staff comprises the following officers : the colonel, major, adjutant, surgeon, veterinary surgeon, riding-master, and the quartermaster. These officers, being clever and energetic, it follows, as a matter of course, that the regiment must be in good order.

Of the regimental staff, the veterinary officer is one of the most important members, and every commanding officer knows how much depends on his having "a good veterinary surgeon." This being universally granted, can anything be more injudicious than a niggardly or unjust treatment of the veterinary officer, who, if he simply does his duty, is not doing well ; for, in his very responsible position, it is not only necessary that he should do that, but also far more—he must take a lively interest in the welfare of his regiment, and especially of the horses, and show it by a cheerful forethought and consideration which no mere duty can compass or claim from him.

It is an undeniable fact that a veterinary surgeon of cavalry, or any other branch of the service, who does his duty, and that *other something* just named (and one who does not do so is a rarity), is one of the most important and valuable officers in his regiment, and is also one who is constantly conferring on his comrades great and unselfish kindnesses, which, however much they desire it, they are unable adequately to repay. The kindnesses of the regimental veterinary surgeon are proverbial ; and the other officers are so accustomed to receive them that they almost forget they are kindnesses at all. How often does he prescribe for, and take endless trouble over their sick hunters, polo ponies, and other quadrupeds, which it is not his duty to do ? and what can be more unselfish than his conduct ? Far be it from me to insinuate that they are ungrateful to him ; but what I do assert is, that he has it in his power to do, and voluntarily and cheerfully does, more for his brother officers and others than they receive from any one else.

The veterinary surgeon knows that he is one great means of keeping the regiment effective, not only by curing the sick and lame, but also by his watchful supervision of the horses generally. His suggestions are often required, not only as regards health, but also in preserving their condition ; and no matter how well a regiment drills and works, all is eclipsed if its horses look bad, for that is a sure sign of an important part of its interior economy

being at fault. Very rarely, in fact almost never, is the veterinary surgeon to blame for this; for he is usually the first to notice it, and to point out what, if his suggestions be attended to, seldom fails to prove an effectual remedy.

But however well the military veterinary surgeon may do his duty, he must unfortunately not be surprised to find that with him "virtue is its own reward"; and the question may well be asked, why his guerdon is not something more substantial and satisfactory? The fact that the reward of meritorious military veterinary surgeons is almost *nil*, is a melancholy one; but they should not therefore be disheartened. They should strive to bring about an alteration, for nothing can be gained by keeping silence. Let them remember the advice of Jupiter to the countryman with his cart in the mud, and profit by it; for by sitting down, and not perseveringly but respectfully urging their just claims, they are playing an unworthy part, and one which will bring nothing but disappointment.

Let us, in pursuing the examination of this question, cease speaking of the army alone, and give a general consideration to the subject. In forming our opinions, we must not forget that the claims of intellect and science to recognition in our country are only now beginning to attract attention, and force themselves on the notice of the public. It is the province and the glory of professions, and of ours by no means the least, that they imply special training, thought, and knowledge; and that, above all, they demand power of initiation and energy on the part of those who have become members of them. It is difficult for those of other avocations, which to a great extent work in certain defined grooves, to see the importance of knowledge, because they too often fail to understand its value. The medical profession has for ages been a prominent sufferer from this cause; but it has of late years undergone a great awakening, and now sees that, by identity of interest and a due assertion of its claims as the noblest of sciences, it can command almost any influence. In Europe, intellect—the triumph of mind over matter—is slowly but surely making its way to that goal where it will use physical strength as its instrument. Our science, too, will take its proper place, and will more quickly do so if those who profess it will only realize the very great importance of their own profession, and if they learn to consider it as far superior to those occupations which run in certain defined grooves, and which follow instructions carefully and strictly laid down in a few books,—which, therefore, only demand from their members application and attention, and which may be called almost mechanical, and consequently easy. But with the veterinary surgeon all is different. He is subject to much anxious thought; he finds that he cannot obtain what he wants from books alone, nor from experience, but that he must also diligently exercise his own brains, and *initiate*—for he has not to do with a piece of machinery, but with beings which, like man himself, are "fearfully and wonderfully made," and subject to all the ills that flesh is heir to.

Comparatively few veterinary surgeons have an adequate conception of what is due to their services, and very many indeed do not know one of the greatest secrets of success in life, viz., that the world is very much inclined to take a man at his own valuation of himself, and only reluctantly forms a lower estimate of him than his own. If they look around at those who have been successful in any profession or other avocation, they will find abundant proof of this maxim. The world having this opinion, not only of individuals but of professions, why should not ours act up to its wisdom? for it has gained, and can gain, nothing by its thus far absurd undervaluation of itself.

Your obedient servant,

"A VETERINARY SURGEON."

THE TITLE OF VETERINARY SURGEON.

(The following are the two instances of imposition referred to in our last issue by "Verbum Sap.")

"GROSS CRUELTY."

YESTERDAY, before the Durham county magistrates, Robert Ayre, who said he had been a veterinary surgeon since the year 1820, was summoned for cruelty to a pony on days subsequent to the 27th of July. The prosecution was instituted by order of the Society for the Prevention of Cruelty to Animals. Evidence was adduced by several witnesses, showing the defendant had purchased the pony for 7s. 6d., with its right fore-leg broken. He declared that he could cure the leg and make the pony into a valuable brood mare. On the 30th of August he was seen taking the pony from a stable near High-street, Stockton, to a field near the racecourse, South Stockton, distant about a mile. The pony was going on three legs, its broken leg trailing along the ground. Two policemen stopped him on the road; but upon the defendant stating that he was taking the animal to be destroyed he was allowed to pass. He next placed it, without permission, in a field belonging to Mr. Garbutt, where it lay for some days unable to move, and but for Mr. Garbutt's servant taking water and food to it death would have occurred from starvation. Information was conveyed to the Society, which caused Mr. Harrison, veterinary surgeon, of Darlington, and Mr. Batey, veterinary surgeon, of Stockton, to visit the pony in company. They found that the bone of the arm of the right fore-leg was broken clean in two, and that the limb was twisted round, it being impossible for the fracture to be set. The skin had chafed off the side next the ground all over the legs and body, the nose was much swollen, and one ear full of matter and fly-blown. Both professional witnesses agreed that it was the most pitiable case of neglect they had ever seen. Defendant was informed that these gentlemen considered the mare incurable, but he threatened to prosecute any one who destroyed it, and ultimately the animal died on the 23rd of August. The Bench said that this was much the most discreditable case they had ever known, and committed defendant to two months' hard labour, without option of a fine. He was ordered to pay the expenses of the prosecution, or undergo an additional month's hard labour in Durham gaol.

"THE VETERINARY SURGEON AND THE MAGISTRATES."

MARLBOROUGH STREET.—George Mills, a van proprietor and driver, was charged with cruelty to a horse.—Police-constable William Leonard, 226 E, stated that he saw an old roan horse drawing a van in Seven Dials, and, as the horse appeared to be very lame in the left fore-leg, and in great pain, he charged the prisoner, who was driving it.—Mr. J. G. Cattrall, M.R.C.V.S., said the horse was extremely lame from complicated diseases of the near fetlock joint and foot. The entire ligaments covering the joint were ruptured, and so decidedly transformed as to render the case incurable. The horse worked in great pain, and was totally unfit for work.—The prisoner called Mr. A. Barclay, veterinary surgeon, of Vincent-square, who said the horse had been under his observation for about two years. He was of opinion it was quite sound, free from any disease, and better at the present time than two years ago.—Mr. De Rutzen asked the witness three times whether the horse was "quite sound," and he answered sometimes in the affirmative and sometimes in the negative.—Mr. De Rutzen said he would see the horse himself; and after examining it he returned to the Court and said:—I have seen the horse is quite unfit for work, and the only thing that surprises me is that there is a veterinary surgeon in London who will say that it is fit for work, that being done to deceive me as a magistrate. If the witness is a

member of the College of Veterinary Surgeons, he is a disgrace to it. The prisoner will have to pay a fine of 20s., and 10s. 6d. costs, and if he comes before me again, and I find the horse at work, I shall deem it a case for imprisonment, and not a fine.

A DOUBTFUL CASE.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Accompanying this letter I send a bottle, the contents of which I cannot determine as to whether it is a worm or ordinary tissue. If you think the case worthy of space in your valuable journal, I shall be very grateful for its insertion, and more so if you will give me your opinion as to the morbid specimen. I was away on leave when the case occurred, and only saw the horse when the wounds were nearly healed. The specimen had been then some time in spirit, and I did not like to take it out, lest I should destroy it. It was preserved and given to me by Captain Hamilton, 2nd Cavalry, Hyderabad Contingent, Bolarum, who thought I should like to send it to you, and this is the first opportunity I have had.

Aug. 12, 1878.—A troop horse of the 2nd Cavalry, Hyderabad Contingent, was admitted to hospital with a swelling over the withers, which were supposed to have been pinched by the saddle. The withers were much swollen on both sides and above, and there was great heat and pain in the part. Treatment, constant fomentations.

Aug. 13.—The enlargement on the near side was very soft. An incision was made low down to the extent of an inch and a half, when there issued a thick yellowish discharge. The wound was thoroughly cleaned, and the probe introduced, when it was found to extend some three or four inches forwards and upwards. Thoroughly washed out, fomented, and dressed with Acid, Carbolic, 1 oz.; Oleum (Lini ?), 8 oz., on a pledget of tow.

Aug. 14.—An incision was made on the off side, in a corresponding position to the near one, but to the extent of two inches or more. The discharged matter was of a greenish-yellow colour, and of the consistency of rotten cheese, remaining in a mass as it fell on the ground. Warm water was then syringed into the wound, and immediately the worm, or whatever it may be, was washed out. The wounds were afterwards treated in the usual way with the dressing before mentioned, and in about six weeks (when I saw the horse for the first time) they were nearly healed. The horse is now at work, and the only remaining trace is a cicatrix on either side of the wither.

I have consulted two or three medical men concerning the specimen, but opinions are divided, as we feared to remove it from the bottle. The reason I have named it a worm is because it was handed to me as such, and believed to be so by the native Salootries.

I am, sir, yours faithfully,

S. M. WILSON, M.R.C.V.S.,

Secunderabad, *Nov.* 18. 12th Royal Lancers.

[Professor Duguid is of opinion that the so-called worm is nothing more than a slough of fibrous tissue, probably detached from the border of the supra-spinous ligament. After a careful examination of the specimen, we quite concur in this opinion.—ED.]

"SPURIOUS TITLES."

To the Editor of the VETERINARY JOURNAL.

SIR,—Your very able leader on the assumption of the title of Veterinary Surgeon deserves the serious attention of the members of the profession, and particularly of those practising in the country. Now that the curriculum at the Colleges has been extended, and the matriculation examination made in uniformity, young men of a better grade must enter the profession. The only drawback now is that of "protection;" so that after years of hard work, study, anxiety and expense, the title of "*Veterinary Surgeon*" shall alone pertain to those duly educated. Our eyes are directed to you, sir, as the most energetic councilman, and when you know you have the "body" with you, I am sure you will overcome all obstacles. There is another matter should at the same time receive some attention; that is, the assumption by members, and mostly young ones, of other than the only legal insignia of the College. Some time since a gentleman of position came to me for the explanation of a bill-heading, thus, "Member of the Royal College of Veterinary Surgeons, London; Member and Fellow of the London Veterinary Medical Society, Member of the Central Veterinary Medical Society, etc., etc., etc." Now the member was no very extraordinary individual, and had hardly the strength to support so much. The gentleman laughed at the explanation, and remarked he was surprised the College authorities allowed such ridiculous bosh.

It is quite time we assumed to be *men* and gentlemen, and took our professional standing in the eyes of an enlightened public. To do this we must firstly away with all *bunkum*, and if these young gentlemen will not see it is to their interest to do so, they might be taught by a wise "bye-law."

What a difference between these and the matured practitioner! The inclosed heading was handed to me by a gentleman much interested in our profession. Here is a much-respected member of the profession, and a veteran, who scorns the title "M.R.C.V.S.," and further states, "Member of Council from —— to —— of the Royal College of Veterinary Surgeons, *and refused the Fellowship.*" Of course, this reads both ways; but I opine he refused the honour of Fellowship. At least this was my construction, but I may be wrong. How conscientious of him, if he thought himself unworthy! Yet I suspect it arose from peculiar emotions of a disordered mind. However, I do trust time will, if it has not already, efface all such "rancour.'

We are also informed by the same heading, "the best qualification for examination as to soundness is anatomical knowledge." I cannot get to the weight of this; my own judgment leads me to infer that sound pathological knowledge leads us to a correct diagnosis of deviations from normal structure. Anatomy teaches us the situation and structure of organs and textures in their normal condition, it is true; but, unless united with sound pathological research, it must fail the desired end.

Trusting, sir, the New Year will bring you health and strength, bodily and mentally, to work with vigour in your most useful professional career, and that prosperity may attend you,

I am, yours, etc.,

"ARTEMUS SECUNDUS."

London, *January 1st*, 1879.

NOTICES TO CORRESPONDENTS, &c.

VETERINARY INSPECTOR.—A fairly good appointment is advertised in the present number of this Journal, of Veterinary Inspector to the Strokestown Union in Ireland. The salary is £120, and we should think the work would not be of a very arduous nature, leaving ample opportunity for private practice.

A CANDIDATE.—1. The expenses of a veterinary surgeon in the army vary considerably, being greatest in a regiment of Cavalry, and less in the Artillery, Transport, and Veterinary Department. 2. The necessary expenses are mess and band subscriptions, uniform, horses and horse equipment, etc. 3. There are no examination expenses on joining the army. 4. There are no fixed periods for the examinations, which are chiefly of a practical character, and do not require special reading up. 5. The army veterinary surgeon can resign his Commission when he chooses.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from Graham Mitchell, Melbourne, Australia; G. Gray, Bakewell; F. Vetchell, Lynn; "Artemus Secundus"; "One of the Sufferers"; W. Smith, Mullingar; J. Cook, Belfast; "A Candidate"; S. M. Wilson, 12th Lancers, Hyderabad; J. Gerrard, Romford; W. J. Masters, Royal Artillery; J. H. Bennett, Havering-atte-Bower; J. Mackinder, Peterborough; "Finem Respice"; "Vetula Avis"; J. Rowe, London; Professor Walley, Edinburgh; R. Ward, London; H. W. Coates, London; J. Masson, Kintore; "A Student."

BOOKS AND PAMPHLETS: *F. Eichbaum*, Die Brusthöhle des Pferdes; *H. Putz*, Ueber Wundheilung; *A. Wynter Blyth*, A Manual of Practical Chemistry; The Analysis of Foods and the Detection of Poisons; *F. Saint-Cyr*, Manuel Pratique de l'Exploration de la Poitrine Chez les Animaux Domestiques; Quarterly Journal of Inebriety.

JOURNALS, ETC.: *Archives Vétérinaires; Recueil de Médécin Vétérinaire; North British Agriculturist; Farmer; Agricultural Gazette; Mark Lane Express; Annales de Méd. Vétérinaire; Revue Vétérinaire; Live Stock Journal; Wochenschrift für Thierheilkunde und Viehzucht; Animal World; Chicago Live Stock Journal; Journal of the National Agricultural Society of Victoria; Der Thierarzt; Archivio di Medicina Veterinaria; La Clinica Vétérinaria; Giornale di Medicina Veterinaria; American Veterinary Review; Lancet; Edinburgh Medical Journal; Practitioner.*

NEWSPAPERS: *Daily Telegraph; Montreal Gazette; Broad Arrow; Army and Navy Gazette; Montreal Star; Manchester Guardian; Scotsman; Indiana State Journal.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, VETERINARY JOURNAL, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

MARCH, 1879.

SARCOMA OF THE LIVER, MESENTERY, AND SMALL INTESTINE OF A COW: LYMPHADENOMA IN A COW.

BY PRINCIPAL WALLEY, EDINBURGH VETERINARY COLLEGE.

ON December 14th, I received a portion of the liver, mesentery and small intestine of a cow, with the following communication from Mr. J. R. U. Dewar, Midmar, Aberdeenshire :—

PRINCIPAL WALLEY.

"Dear Sir,—I sent away part of the liver, a portion of the small intestines, and the mesenteric glands of a cow to you yesterday. I am not quite sure of the nature of the disease. The liver weighed over 66 lbs. I will send you more particulars soon.

Writing two days later, Mr. Dewar gives the following additional particulars :—

"The cow, of whose liver I sent a part to you, was an undersized shorthorn, some eleven or twelve years old ; had been sucked this summer by twin calves, and was consequently in very low condition. She had been noticed ill about three weeks, and when I first saw her I thought she was suffering from simple indigestion, mainly caused by her poverty ; but as she did not improve, I was a good deal puzzled as to the nature of her ailment. The treatment at first was purgatives and stimulants, followed by stimulants, nutrients, and stomachics, and in the end by diuretics : the *post-mortem*

examination showed, however, that no treatment would have been of any avail. About a week before she died fluid began to collect in the abdomen. There was never any icteric appearance of the skin, and as her colour was a light roan, it would have been easily seen had it existed. She died from sheer inanition; her pulse was seldom, if ever, over 55, and her temperature only once reached 103°, and was generally about normal; the last week, indeed, it was oftener under than over the normal.

"On *post-mortem* examination, several pailfuls of fluid were found in the abdominal cavity—probably from four to six—and there was at least one in the thoracic cavity, the fluid from the abdomen being of a light yellow colour. The liver, as I have said, weighed over 66 lbs., and was diseased throughout; about the natural shape, and smooth in outline. There were fully twelve pints of fluid in the gall bladder of much the same colour as the fluid in the abdomen, but slightly thicker in consistence; the spleen and all other organs, save the lymphatics of the mesentery and the piece of bowel I have sent you, were healthy. There were two small button-like masses—not over three-quarters of an inch in diameter—attached to the pleura on the superior surface of the right lung as it lies against the large blood-vessels. The thoracic lymphatic glands were, however, affected, and the pancreas seemed slightly diseased. On section, the liver was found to be very hard, and grated under the knife; clear fluid, some of it being of a straw colour, the remainder having a greyish, milky hue, flowed from it. I am of opinion that it is cancerous, of the scirrhous variety. In some places the gland cells have entirely disappeared and their place occupied by small spherical, highly refractive bodies; where the liver is not much affected they can be seen invading the interior of the gland cells, some of which are also distended with fat globules, their natural outline being entirely lost. In the part I examined the stroma was not very distinct, but its fibrillated nature was quite apparent. I also observed that many of the normal liver cells in the invaded portions of the organs were tinted with bile, but there was no tinting where these supposed cancerous elements were contained in them."

The appearances presented by the specimens sent, were as follows:—

Liver.—Peripheral half was of a creamy colour, exceedingly hard, and grated on section; it was completely solidified, the blood-vessels and biliary ducts being entirely obliterated: the proximal portion was of an orange yellow colour, mottled with grey patches varying in size from a pea to a walnut; less hard than the peripheral portion, and blood-vessels and ducts obliterated to a much less extent; projecting into the cavity of the larger trunks of the portal vein, were irregular masses of the new growth.

Mesentery.—Lymphatic glands had undergone the same

change as the liver structure and, in addition, numerous small centres of new growth existed in the mesentery itself.

Intestine.—Mucous membrane thickened and increased in vascularity; sub-mucosa hypertrophied and the seat of numerous small masses of the new growth, with several large ones about the size of a Brazil-nut projecting through the membrane into the cavity of the intestine, and having a nodulated surface.

The cut surface of the liver in the portions which were invaded to the greatest extent yielded a copious juice of a creamy colour and consistence, microscopical examination showing that it was mainly composed of large round, or slightly oval, nucleated cells—the condition of the liver cells being similar to that described by Mr. Dewar.

On examining a small section microscopically, I found it to consist of a dense fibrillated stroma, the meshes of which were packed with cells giving it an appearance very similar to that depicted in figure 25, p. 154, of Jones and Sieveking's "Pathological Anatomy."

From the appearances presented, I was at first inclined to look upon the new growth as lymphomatous, but subsequent consideration of its characters and the manner of its dissemination led me to the conclusion that it was sarcomatous, or at least identical with Virchow's lympho-sarcoma. I have not, however, completed my investigation, and several of my professional friends—medical and veterinary—have been supplied with specimens for examination. Should we arrive at a different conclusion than that above mentioned, I will communicate with you again.

The points of interest in connection with the case are, the extension of the disease to the small intestine, the amount of infiltration, and enormous size of the liver.

Since receiving the above specimen, another section of cow's liver has been forwarded to me by Mr. Dewar, in reference to which he says, in a letter dated January 14th:—

"I have sent you another piece of a cow's liver: the animal from whose body it was removed died on the 7th inst. I can tell you but very little about the cow in question, except that she was of the black-polled Aberdeenshire breed, was in good condition, and had been thriving well until about a week prior to her death, when she presented symptoms of acute

indigestion, with pleural and peritoneal effusion. As I had to make the *post mortem* up to the knees in snow, in an open field late in the evening, I could not take particular notice of the appearances presented. I think, however, that this is a case of lymphadenoma."

A very cursory examination enabled me to endorse the opinion expressed by Mr. Dewer, as the characters of the new growth were distinctly those of lymphadenoma, though it is the first well-marked case I have seen in the liver of the ox.

EXTENSIVE SUPPURATIVE MYO-CARDITIS AND PERICARDITIS, WITH MITRAL AND AORTIC STENOSIS, ECCENTRIC HYPERTROPHY OF THE HEART, AND CARNIFICATION OF THE LUNG TISSUE, IN A PONY.

BY THE SAME.

A SHORT time ago I received a box containing the heart, pericardial sac, and a small portion of the lung of a pony, from Mr. E. Meek, M.R.C.V.S., Walsall, and, by post, the following letter:—

"I have, per London and North-Western Railway Company, sent you a box containing the heart of a pony about thirteen hands high, rising four years old, that I have had under treatment for the last six weeks. His illness commenced with a trifling cough and a slight discharge from the nostrils; the discharge soon ceased, and the remaining symptoms were slight injection of the mucous membranes, an almost imperceptible pulse, and loss of appetite; he gradually got thinner, and dropped dead yesterday while the groom was drenching him.

"I have not cut into the organ, preferring to send it you intact, as an examination of it may be interesting to you in the presence of your students. On making an examination, if there is anything particularly interesting, I shall be glad of your informing me. On opening the pericardial sac, a large quantity of fluid escaped."

In answer to some queries which I addressed to him, I received the following letter from Mr. Meek subsequently:—

"The pony belonged to Mr. Hunt, of Wednesbury, and had been in his possession six months; was broken when he bought it, and worked quietly and well all the time, and was not ill in any way during that time, until about six weeks prior to his death, when he showed the usual symptoms of

an influenza cold, which passed off in a few days, excepting an occasional cough which continued up to the time of his death. The breathing was never embarrassed in the least. He was exercised regularly up to within a week of his death, and one day, a fortnight prior to his decease, was driven four miles and showed no symptoms of exhaustion or distress, but did not go with his accustomed freedom. All the other organs in the body were healthy, with the exception of the lungs being throughout similar to the small portion I left attached to the heart. When I opened the pericardial sac, I should think quite three quarts of fluid escaped of the thickness and colour of whey, with a good deal of pus floating in it.

"I did not examine the blood-vessels of the lungs sufficiently to say whether there were white blood clots in them or not.

"The pony had never been frightened or exposed to cold that the owner knew of, neither did he show any symptoms of Strangles while in his possession.

"I never could detect anything wrong on auscultation, and examined his chest many times. I had a bullock slaughtered a short time back for disease of the heart, which was palpable enough, for I could hear the heart's action at a distance of some yards away from him, the sound resembling that produced by the movement of any object in a collection of fluid,—as distinct a noise, in fact, as I could make by moving my hand backwards and forwards in a bucket of water; and, *post mortem*, I found a piece of stay wire in the heart and a very large quantity of serous fluid in the pericardial sac, the fluid being clear and of a light red colour; while the fluid in the pericardial sac of the pony was, as I have said before, similar to whey. For three weeks previous to the pony's death I could not count the pulse at the jaw."

On examining the organs mentioned, I was led, involuntarily, to ask myself, Is it possible that an animal lived on until the heart had assumed such conditions as these?

The portion of lung presented all the characters of carnification.

The epicardium and the internal surface of the pericardium were thickened, opaque, in some parts united by recent adhesions; in others, covered by layers of lymph in various stages of organisation and degeneration.

The heart weighed ten pounds, and, as may be assumed from its weight, was enormously increased in bulk, its walls being much dilated.

The walls of the right heart were not materially altered structurally; but on carefully examining the base of the left ventricle, I discovered that it was greatly thickened and hypertrophied, of a greyish colour, and entirely separated from the epicardium, its external surface presenting a ragged, ulcerated

appearance, owing to caseous degeneration and suppuration which had evidently been proceeding rapidly.

The walls of a large abscess, which had evidently evacuated its contents into the pericardial sac, were discovered in close proximity to the diseased part to which I have just referred.

The interior of the right heart was normal, but on laying open the left ventricle I found that the mitral orifice was so much narrowed as to scarcely admit two fingers together, and the aortic opening was in much the same condition. The valves themselves were healthy, except that to the under surface of one of the cusps of the mitral a nodulated mass of newly organised lymph was adherent.

The stenosis of the mitral and aortic orifices was due to the protrusion inwards of the hypertrophied and partially degenerated cardiac walls.

The cause of the pulmonary carnification, as also of the indistinct pulse, is patent; but the absence of more pronounced symptoms and the ability of the pony to travel a distance of four miles a fortnight prior to his death, without evincing symptoms of distress, is remarkable.

FRACTURE WITHOUT DISPLACEMENT, CAUSED BY MUSCULAR ACTION.

BY F. BLAKEWAY, F.R.C.V.S., STOURBRIDGE.

I SEND a brief notice of a case of fracture without displacement, which occurred in my practice recently—not that such an accident is at all rare, but fracture of the humerus from mere muscular action in a young healthy animal may, to some of the readers of the VETERINARY JOURNAL, seem rather strange.

A bay cart mare, seven years old, belonging to Mr. H. Smith, of this locality, was on November 26th, drawing manure out of town, she being in traces, as two horses were in each cart. A second load had been carried to the field, where the ground was a little heavy, when she, being a very free animal, "jumped," to use the waggoner's expression, into the collar, and instantly became dead lame. She was at once released from the cart and walked a distance of three or four fields into her stable.

vehicle a distance of four miles. The groom stated that he I was sent for, and on arrival found her resting the limb; and although at times she put her weight upon it, yet she appeared to be in intense pain. I could detect no crepitation, yet from the symptoms I was compelled to inform the owner that I was certain fracture was present, and held out but slight hopes of her recovery. As she was a valuable mare, however, and in foal, treatment was decided upon, and I at once placed her in slings, and ordered constant fomentation to the injured part.

Next morning there was great swelling,—nevertheless the mare appeared to be easier, and she continued progressing favourably, as we thought, for three days. At the end of this period separation of the fractured pieces of the bone took place, and she was of course immediately killed.

On examining the limb great extravasation of blood into the surrounding tissues was discovered, with laceration of the muscular substance in places. The humerus itself was the seat of an irregular fracture towards the lower third of the bone. This fracture must have been caused by muscular effort only, as the mare could not have come into contact with any body or substance at the moment the accident occurred likely to produce such a serious lesion,—and until she "jumped" she was perfectly free from lameness.

CIRRHOSIS OF THE LIVER IN A BAY HARNESS GELDING.

BY ALEXANDER GUNN, V.S., BALLOUN, BEAULY, N.B.

I VENTURE to submit to you for insertion in the VETERINARY JOURNAL, should you deem it of sufficient interest, a case of Cirrhosis of the liver, which I may say is not of common occurrence in the equine species; and as the diagnosis of liver diseases is generally attended with much difficulty, it may be of some little interest to the readers of the Journal.

The animal referred to was a valuable five-year old bay harness gelding, the property of W. Arres, Esq., Fodderty, Dingwall. I was asked by the owner on 14th September last to examine him, after he had been driven in a light four-wheeled

took a good deal of driving. On examination the pulse numbered thirty-four, and was feeble; the conjunctival mucous membrane was highly injected; the eyes watery, and eye-lids half closed; the respirations accelerated; knuckling over of off hind fetlock; auscultation revealed crepitations on the lower border of the left lung, immediately behind the elbow, but there was nothing amiss with the heart or right lung. An occasional cough had been heard for some days previous to this time, although I failed to hear it when making the examination. The temperature in the rectum was 102° F. Pressure along the border of the false ribs and intercostal spaces did not cause the animal to evince pain. He had refused his corn for some days previously.

Diagnosis.—Pneumonia—circumscribed—of left lung, with disordered liver. Ordered an oleaginous aperient, a stimulating liniment to be applied over the region of the left lung, and Potass. Chloras. 2 ounces night and morning in bran mash.

On the 16th I found him much the same as on the 14th. The temperature was 102°; urine high-coloured; pulse sixty, small and feeble; mucous membranes of a rusty colour; eyelids half closed; standing with the lower jaw resting on the manger. An examination of the urine showed the presence of bile in large quantity.

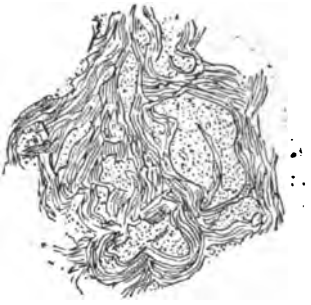
20th.—Slight improvement; pulse fifty-four, and full; temperature 101·5°; refused bran mash and corn; drank sparingly, and ate very little hay; would eat a Swede turnip occasionally. The cough had not been heard for twenty-four hours. Auscultation gave a negative result; percussion revealed a dull sound, as if part of the lung was undergoing hepatization.

24th.—No improvement since last visit. The animal stood with his head resting on the manger; the groom said he did so for hours at a time. He was becoming much emaciated, and refused bran and corn; no increase of thirst; ate sparingly of any food; abdomen tucked up, and coat pen-feathered. He lay on both sides; kicked often with the off hind leg. Gave a bolus composed of aloes 5 drams et hydrarg. sub. mur. 3 drams; and when the physic operated, nitro-muriatic acid twice a-day in cold water.

28th.—Great emaciation ; pulse fifty-eight ; temperature 102·3°. The physic had operated, and the animal took a little bran mash and turnips, but would not touch corn, and ate very little hay. The membranes were still injected ; the fæces were natural ; urine amber-coloured and scanty. A blister was applied to the right side, over the region of the liver. Pressure over the right side, prior to blistering, caused no pain. He continued to strike with the off hind-leg. A slight sweat was noticed by the owner in the morning over the right side of the neck, shoulder, and chest. The cough was not heard for the previous three days. The skin emitted a fœtid smell, as also did the breath. Owing to the rapid emaciation, I was induced to feed the animal on milk and eggs twice daily, along with stimulants. Mineral tonics were also tried alternately, but no improvement was noticeable. From this date till the 18th December, when he died, anorexia was a marked symptom throughout. He had not eaten above four pounds of corn for six weeks.

On *post-mortem* examination, made nineteen hours after death, I found the liver much hypertrophied and greyish coloured ; it weighed about 45lbs. Its capsule was slightly roughened near the centre, and smooth towards the margin. On a section being made through the liver, the Glissonian capsule was observed to be much thickened near the centre, and gradually became attenuated towards the margin. The thickest part was nearly quarter inch, and a small quantity of bile flowed from the section. The liver was very tough and hard. A small circumscribed patch of inflammation was detected on the border of the left lung, simulating an inverted M ; it extended to about four inches from the margin ; and on a section through its border and centre being made, a quantity of pus of a dark yellow colour flowed from it. The part of the lung was quite hard to the touch. With the exception of the liver and left lung, nothing abnormal could be noticed in any of the abdominal or thoracic viscera. Drs. Bonce and Peterkin, of Dingwall, who kindly attended at the necroscopic examination, were clearly of opinion that it was a well-marked case of Cirrhosis. On making a microscopical examination of a section of the liver I found it to present the following appearance, a

sketch of which I have made as exact as possible—as seen through the microscope—using a low magnifying power, which



Section of Cirrhosis of the Liver, showing the amount of Fibrous tissue between the lobules.

shows the great amount of fibrous tissue in the indurated organ.

After the above examination, the owner told me that the horse had fallen twice on his right side; first, some twelve months since, when out exercising, he shied and came suddenly down on his right side, injuring his groom's right leg, which has been the cause of severe Sciatica in the limb ever since. The second fall occurred some months after the first, when, being driven in harness, he turned on the road and fell heavily on his off side, but without external injury. Shortly after this (the owner could not give the length of time) the horse became dull for a few days, but this passed off without treatment, and he had been more or less dull at intervals after the falls referred to. Might not these two severe falls have something to do in this case, by causing a certain amount of inflammation in the organ? I have known the animal since he was a two-year-old colt; he always looked fat and had a sleek coat, was easily kept in condition, and was very high-spirited.

GLANDERS AND FARCY IN INDIA.

BY A. E. QUERIPEL, M.R.C.V.S., ROYAL ARTILLERY AND RESERVE REMOUNT DEPÔT, HAPUR, INDIA.

FROM time to time there has been allusion in the columns of the VETERINARY JOURNAL to the above subject, and in the issue for December, 1877, there is mention of a peculiar type of this disease, which showed itself with great violence in one of our cavalry regiments. As I was fortunate to have witnessed a number of these rather unusual cases, and also to have assisted at the *post-mortem* examination of two horses which were destroyed, I feel that a few remarks on the malady may not be amiss, especially as it assumed a form which, as far as my experience teaches me, is of rare occurrence at home. Any one without previous knowledge of this type of the malady would, in all probability, allow the small tumours, which are the only premonitary signs, to pass unnoticed, and the horse might be permitted to remain in the stable and be worked, thus spreading the disease far and wide. In addition to this, danger might accrue to his attendant, through ignorance of the nature of the disease. Fortunately, in England this insidious type of Glanders and Farcy is seldom met with; but Continental writers seem to be well aware of its existence. Most of the tumours appeared on the ribs, generally just at their arch, and when first formed they seemed exactly as if they were caused by the saddle. For a short time they were hot and tender, but soon after became quite hard and callous. I might add that no treatment proved of any avail; for, although blistered repeatedly with Ung. Hydrarg. Bin., coupled with the administration of absorbents, still they remained just as they were in the first instance. The horse being segregated and placed under observation, would be noticed, although supplied with liberal diet, to fall away in condition, and the Schneiderian membrane generally assumed an unhealthy bluish appearance. The disease would remain in this latent state for a period varying from ten to six months, when suddenly acute symptoms would supervene. The rapidity with which the disease then progressed was amazing. One case in particular, which at present occurs to my memory, was

noticed at 6 A.M. to have œdematous swelling of the off-hind leg, with enlargement of the lymphatic glands on the inner side of the thigh. The horse was at once recommended to be destroyed, but it was 6 P.M. before the recommendation had gone through the regular channel, and the committee assembled. By this time, nearly twelve hours after the acute symptoms were first noticed, ulceration had set in, and the horse was an object of pity. The two cases to which I alluded above, and the *post-mortem* examination of which I intend to append a notice, had been affected with this kind of tumour for some time; and, although no virulent symptoms had as yet appeared, still, owing to the unhealthy condition of the animals, it was decided, on the recommendation of the principal veterinary surgeon, that it would be advisable to destroy them, and the result of the *post-mortem* examination fully bore out the wisdom of this decision.

Case No. 1 had been affected for some little time with one of these peculiar tumours, the exact seat of which I cannot now call to mind; but, as far as my memory serves me, it was situated, as in the majority of these cases, on the ribs. The horse was isolated, and fed liberally; but still he fell away rapidly in condition. The *post-mortem* examination disclosed the lungs to be very pale in colour, and over the surface, just beneath the pleura, were to be noticed isolated glanderous or miliary tubercles. None of these had acquired very large size, as this was an animal that had not been affected for any lengthened period; they were, however, noticed to be in various stages—some were grey and semi-transparent, whilst others had proceeded farther, and had undergone caseous degeneration, whilst, again, others felt as if they were filled with calcareous deposit. These were spread all over the lungs, but their lower portions were more generally affected. At this part they were larger, and evidently of longer standing. The Schneiderian membrane was slightly congested, but, with this exception, was perfectly healthy—no sign of any glanderous ulceration was to be noticed. The liver was greatly congested, and much thickening of the right lobe was observed. Tubercular deposits in all stages were to be noticed studded all over this organ, but in the right

lobe they were so grouped together as to form one mass. I am aware that some authorities are of opinion that these are not tubercles, but those to which I allude so closely resembled those found in the lungs both in form and structure, that I am of opinion that only as such can they be considered. Some of the mesenteric glands were enlarged. The spleen and kidneys were healthy. The heart showed signs of atrophy. The costal tumour appeared fibrous, and no change or degeneration was to be noticed in its centre.

Case 2 had been affected for a lengthened period with a hard circumscribed tumour on the wing of the atlas. This horse was one to which I before alluded as having been placed under treatment. Absorbents were given, and the tumour repeatedly blistered, but still no diminution in size was observable. The *post-mortem* examination in this case showed the lungs to be affected with the glanderous tubercles—the right more so than the left; in the former they were larger and filled with caseous matter, whilst in the left they appeared as small hard nodules under the pleura. Surrounding the lower part of the trachea, at its bifurcation, was a large tumour, the outer covering of which was composed of dense fibrous material; the centre portion was filled with caseous matter, and surrounding the whole was a huge mass of tubercular deposit, which, together with the tumour, weighed 7 lbs. The pituitary membrane was highly congested, but totally devoid of any appearance of glanderous nodules. The liver, as in the former case, was the seat of extensive tubercular deposit; but in this instance the part mainly affected was the anterior surface of the left lobe. These tubercles also were in different stages—some being quite gritty when cut through, whilst others were soft and filled with caseous matter. The glands in the mesentery were much enlarged, and around one of them was noticed a quantity of grey tubercular matter. This gland was filled with caseous matter, and, in fact, had the appearance of a homogeneous mass. Surrounding it was a fibrous sac containing about two ounces of dense aluminous fluid. The tumour on the wing of the atlas was deep seated, and consisted of a dense fibrous sac extending about four inches in length. On being opened it was found to contain no liquid of

any kind, but was filled with innumerable large nucleated cells of pearly whiteness, and different shapes, although the majority were round and oval. They did not coalesce, but fell out singly. The exact nature of the tumour I could not determine, as I never remember before meeting with one of this class.

From the history of the above outbreak, it will be seen how very insidious is this form of the disease, and how careful we should be in examining horses that may at the time be occupying the same stable in which any cases may have occurred, and the cause of which may be difficult to understand. It will be readily understood that one of these affected animals permitted to occupy a stable and to associate with others, would in all probability spread the contagion, and the regiment, battery, or private stable would be decimated before, perhaps, the cause could be discovered. This form of the disease is quite as insidious and dangerous as that reported by Lydtin, Zundel, and others in your "Veterinary Science and Police."

It can no longer be a matter of doubt whether Glanders and Farcy exist in India. In fact, on the contrary, I fear that it might be said that it has taken great hold and obtained a very firm footing amongst the horses of this country. At the present time it exists in a virulent form amongst the Dak horses on the Saharunpore and Mussoorie line; and although the services of the veterinary surgeons were placed for some little time at the disposal of Government, for the purpose of attempting to arrest its progress, and notwithstanding that they worked indefatigably, still I hear that it is far from being exterminated. It is actually reported that the owners of these animals placed scouts on the road to give timely notice of the approach of either of these officers and that immediately one came in sight, the affected animals were sent into the jungle to escape observation. For the truth of this statement I cannot vouch, but coinciding so thoroughly as it does with the character of the natives, I am inclined to believe it. Labouring under such great disadvantages, and having to combat such lamentable ignorance, can it be a matter for astonishment that the disease becomes spread far and wide? My only surprise is that we do not hear of more frequent outbreaks than at present.

CASE OF PNEUMONIA IN A TIGER.

BY L. BUTTERS, M.R.C.V.S., NORWICH.

THINKING a brief account of the above might be interesting in so unusual a patient, I have ventured to send a few notes of the same. The animal was the large Bengal tigress known as "Poonah," the property of Messrs. Bostock and Wombwell, whose menagerie has lately been stationed in this city. I was called in to see her on January 3rd, and found her very ill, and presenting the following symptoms: She was sitting on her haunches, breathing quickly, and every now and then was attacked by fits of coughing; she was very dull and dispirited; there was loss of appetite, slight watery discharge from the eyes and nostrils, and the usual indications of a severe "cold" and fever. On the following day she was much worse, and on the 5th made considerable noise in her breathing. The flanks heaved very quickly, and she looked extremely ill. On the 6th the symptoms were still more aggravated: breathing very quick, with severe fits of coughing; the watery discharge from the eyes had increased. The weather was at this time very cold, with easterly winds prevailing. She was so prostrate that I went into the den and took the pulse, which numbered 170 and was weak in character. I also auscultated each side of the chest, with the following results: The respiratory murmur was very much increased, with a wheezing noise at the superior parts of the lungs, but no absence of sound at any part. The bowels were very much relaxed (the attendant had given her some castor oil when she was first noticed to be unwell). I left to be administered, Spts. æth. nit., half an ounc; Tinct. Opii., 2 drachms, morning and night, and three or four ounces good port wine two or three times a day, which was very easily administered at first. The sides of the chest were stimulated by means of sinapisms. She was comfortably propped up, and hot water cans kept constantly in the cage; we also did our best to exclude all draughts. On the 7th the pulse was 180, and I could only feel it at the heart, the jerking action of the breathing making it very difficult to count at the arteries. The respiratory sound very loud in the lungs, with bronchial sound at the inferior parts. I counted the respi-

rations, which also numbered 180 per minute. The animal made a great noise at each expiration. 8th. Condition much the same; the breathing could be heard outside the menagerie. There was dulness of the right lung, except a little tubular sound at the superior part during each expiration. I did not think she would live long, and expected to hear of a fatal termination every time I visited her. On the 9th she exhibited slight signs of improvement, lapped some eggs beaten up with milk, and seemed to take more notice of things going on around her. She also drank a considerable quantity of good beef-tea. The weather continued bitterly cold. Had her well packed up and looked after; the keeper was most attentive to her comforts, and was in every respect an admirable nurse. On the 10th her pulse was 140, and she seemed much better. There was a copious discharge from the nostrils. She did not make so much noise in breathing. 11th. About the same. On the 12th I took the temperature by placing one of Arnold's thermometers between the shoulder and chest for three minutes; it registered 99° F. She still partook of the milk, and also some bullock's fresh blood. On the night of the 13th I was sent for, with the intimation that she was worse. This I found to be the case. She was lying stretched out, regardless of the presence of anybody around her. The breathing was much worse; the pulse was 170. The weather was very cold and bleak, and very windy. It was now very difficult to administer medicine, owing to the fits of coughing; but I gave her a little Amm. carb. occasionally in a pill, and also opium in the solid form. I had to discontinue the wine and other stimulants. She went on in this manner until the night of the 16th, when I was again sent for at eleven o'clock. At that time a copious discharge of pus was proceeding from both nostrils; it had no smell. She was evidently dying. On the following day I requested Messrs. Greaves and Fleming, who were in Norwich, to look at her, and acted upon what suggestions they kindly offered, but with no avail; for on the following morning, the 18th, she died. On making a *post-mortem* examination all the viscera were found to be perfectly healthy, with the exception of the lungs. These organs were considerably enlarged, and very much consolidated; and in those portions which were not so, pus and frothy mucous

exuded from the cut surface. There was no disease of the pleura pulmonalis, but on the outside of the lung certain portions had a discoloured appearance, which, on being opened, disclosed irregularly-defined cavities containing pus. These were not numerous, and there were no indications of any chronic disease. The lungs presented, to my mind, a striking example of the grey hepatization, or purulent infiltration, described and so designated by Laennec.

[Through the courtesy of Mr. Butters, we had the opportunity of seeing this splendid tigress during her last hours. It was evident from the prostration, the spasmodic gasping breathing, and other symptoms of an unmistakable and painful character, that recovery was hopeless. What was particularly striking was the resigned condition of the poor creature, the evident gratefulness she manifested when attempts were made to relieve her, the kind of suppliant look she gave when anyone went near her, and the extraordinary docility she evinced when being handled and examined. Instead of the grand, ferocious feline of the jungles, ready to spring upon any other creature possessed of life, debility, and the distressing *besoin de respirer*, had converted her into the most gentle, grateful and pitiable of domesticated animals. The Pneumonia was undoubtedly due to the severe and protracted cold weather which this exotic from a hot country had been exposed to in a travelling caravan.]

EMBOLIC NEPHRITIS AND WORM ANEURISM IN THE HORSE.*

BY DR. LUSTIG, VETERINARY SCHOOL, HANOVER.

ON May 19, 1874, the Graf von Schwiechelt sent a six-and-a-half-year-old gelding to the Hanover Veterinary School to be treated for Colic. According to the history that was received with the horse, it appeared that, about a year previously, he was operated upon for fistula of the spermatic cord, from which time he had never regained his former liveliness. Evident signs of disease were not, however, observed until about eight days

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before the above date, when his appetite diminished, and the pulse became intermittent and slower than in health. On May 16, symptoms of Colic appeared, for which he was treated by a veterinary surgeon, and on the 19th he was taken to the clinic of the above-named school, there being no real signs of improvement.

When examined on this day, the pulse was 76 per minute; respirations, 16; internal temperature, 39.4° C.; appetite imperfect; behaviour quiet; urine yellow, acid reaction, with a specific gravity of 1034 at 15° R. (18·7° C.), and albuminous. Microscopically examined, a few round granular cells, and flattened epithelial cells of various sizes, with crystals of calcium oxalate, were detected.

May 20.—Pulse 60, regular and tolerably strong, the artery being normal and tense; the submaxillary vein was little filled; the conjunctivæ moist, tinged with a yellow colour; Schneiderian membrane moist, pale at its inferior part, but more cyanotic superiorly. The heart's beat was strong, and could be felt over an abnormal circumference on the left side; the sounds of the organ were not followed by any murmur; the systole had sometimes a metallic sound, and was louder than the diastole; on the right side both sounds were abnormally audible. Respirations normal, and ten in number per minute. External temperature changeable; the internal was 39·4° C. Appetite bad. Tongue moist and slightly furred. Fæces soft, of a greenish colour, and neutral reaction. Urine yellow, slightly filamentous, acid, free from albumen; specific gravity 1028 at 16° R. (20° C.) Prepuce œdematous and swollen. Spermatic cord thickened; its superior end could not be felt; inferiorly there was a fistulous opening. By examination per rectum, a swelling could be felt in the neighbourhood of the bladder, but its anterior border could not be distinguished.

I considered this swelling to be a new formation, in connection with the champignon, from its immovableness and its projection into the pelvic cavity. To this, also, was attributed the colicky pains, and, therefore, an unfavourable prognosis was arrived at.

21st.—In the same condition.

22nd.—Pulse, 60; respiration, 12; temperature, 39·1°C.; appetite

impaired; symptoms of Colic present. With regard to treatment, I may mention here, to avoid repetition, that it was always symptomatic, and directed with the object of opening the bowels; therefore, doses of natrium sulphurium, alternated with those of aloes, were administered. Urine bright orange-colour, turbid, slightly filamentous, alkaline, slightly albuminous, sp. gr. 10·32 at 19° R. (23·7°C).

23rd.—Animal again quiet. Appetite improved. Purging. P. 54. R. 10. T. 39·3°. Urine dirty orange-colour, turbid, gelatinous, non-filamentous, non-albuminous. Sp. gr. 1047 at 13° R. (16·7° C).

24th.—No change. Urine dirty brown, very cloudy, clotty, gelatinous, non-filamentous, albuminous. Sp. gr. 1045 at 13° R.

25th.—Griping pains. P. 60. R. 10. T. 39·2°. Urine dirty, greyish-green, very turbid, filamentous, albuminous. Sp. gr. 1036 at 14° R. (17·5° C).

26th.—P. 48. R. 10. T. 38·8°. Appetite good. Urine dirty, dark yellowish-green, very cloudy, filamentous, alkaline, albuminous. Sp. gr. 1033 at 15° R. (18·7° C).

27th.—P. 54. R. 10. T. 39·2°. Urine as it was on the 26th, with the exception that its sp. gr. was 1046 at 17° R. (21·3° C).

28th.—Essentially the same. Urine dirty yellow, turbid, somewhat filamentous, alkaline, traces of albumen. Sp. gr. 1038 at 13° R. Microscopically: crystals of calcium carbonate and oxalate were found, as well as numerous granulated and mostly round cells of various sizes.

29th.—P. 44. R. 9. T. 38·1°. Urine dirty orange-colour, slightly filamentous, alkaline, with traces of albumen. Sp. gr. 1035 at 18° R. (22·5° C). The above-mentioned round cells were very few.

30th.—No change. Urine reddish yellow, turbid, non-filamentous, alkaline. Sp. gr. 1038, at 11° R., with traces of albumen.

31st.—Urine bright orange-colour, cloudy, non-filamentous, alkaline. Sp. gr. 1038 at 20° R. (25. C.)

June 1st.—P. 40. R. 10. T. 37·9. An examination per rectum discovered the swelling previously described to be considerably smaller, and fluctuating in its centre. Urine dirty yellowish-green, turbid, filamentous, alkaline, albuminous. Sp. gr. 1028

at 19° R. Crystals of calcium carbonate and oxalate, also granular round cells, and small granular globular bodies, together with diaphanous epithelial cells having a similar form, were detected by the microscope.

This examination at first led to the supposition that an abscess had probably formed, and that a discharge of pus had taken place, either into the bladder or into the intestines, after a previous union of the parts involved had been effected. The bladder could not be felt; but on passing the catheter, and filling that viscus with water, it was easily ascertained to have no connection with the swelling; so that this, together with the conditions of the urine, proved this supposition to be unfounded. According to our knowledge of diseases of the kidneys of the horse, I was now at a loss to give an explanation of the morphological elements found in the urine. The presence of the albumen in the urine was, until now, attributed to abnormal circulation, caused by the œdema of the prepuce, the fistulous spermatic cord, and the above tumour or abscess. But the presence of numerous cells in the urine could not be reconciled with my interpretation, and I was forced to accept the probability, although with some hesitation, of a disease of the kidney, in order to account for these morphological elements; yet I was not able to bring this into harmony with the phenomena of Colic and its causes.

2nd.—P. 46. R. 12. T. 38·9°. Urine dirty yellow, turbid, slightly filamentous, alkaline, albuminous, with sp. gr. 1020 at 20° R. By means of the microscope the same elements, though fewer in number, were seen. The systolic sound of the heart was now somewhat deeper than the diastolic.

3rd.—P. 48. R. 15. T. 39·2°. Appetite improved. Fæces had an acid reaction. Urine yellow, watery, slightly cloudy, non-filamentous, alkaline, non-albuminous, very few round cells, and flattened epithelial cells. Sp. gr. 1003 at 25° R. (31·3° C).

4th.—P. 48. R. 24. T. 38·8°. The first sound of the heart weaker than normal, but louder than the second and metallic sound. When percussed on the left side the animal coughed twice, the cough being weak and moist. Tympanitic and dull sounds were found in varying degrees, and close to one another.

Auscultation gave no result. Appetite small. Urine of a yellow colour, almost clear, slightly acid, filamentous, alkaline, albuminous, and sp. gr. 1020, at 20° R. A few granular round cells and crystals of calcium carbonate and oxalate were present.

From these indications Metastatic Pneumonia was diagnosed, and this was supposed to be due to the swelling in the pelvic cavity—that is, of the spermatic cord.

5th.—P. 46. R. 20. T. 38·5°. Urine orange-coloured, turbid, slightly filamentous, alkaline, albuminous; sp. gr. 1027 at 17° R. It presented much the same appearance under the microscope until death took place, except that the cells were fewer on some days than others, but they were never very numerous.

6th.—P. 44. R. 18. T. 38·7°. Urine orange-coloured, turbid, filamentous, alkaline, albuminous; sp. gr. 1022 at 19° R. (23·7° C).

7th.—P. 46. R. 22. T. 38·6°. Urine yellow, turbid, non-filamentous, alkaline, and albuminous.

8th.—P. 36. R. 18. T. 38·5°. The pulse of the carotid artery (not the jugular vein) was visible at the neck, and on auscultation it was found to be synchronous with the diastole, and gave an audible sound. The submaxillary vein was abnormally distended, but not tense; in front of the breast the systolic and diastolic movements could be seen. The diastolic sound of the heart was somewhat stronger than previously, but had a weak metallic ring. On both sides percussion gave isolated, dull sounds, but on the superior part of the right side there was a distinct tympanitic resonance. Percussion on either side caused a weak faint cough. Urine yellowish, non-filamentous, alkaline, albuminous. Sp. gr. 1020 at 17° R.

With regard to the phenomena presented by the circulatory apparatus, we could partly account for them by the Pneumonia; for in consequence of the disordered condition of the digestive organs, the heart was very weak from want of proper nourishment, and was therefore not able to overcome the obstruction to the circulation in the lungs caused by the Pneumonia. The result was that the venous system became congested, a circumstance demonstrated by the distended submaxillary vein and

the venous movement seen in front of the chest; but no satisfactory physiological explanation could be given for the other phenomena which the heart and vessels presented.

9th.—P. 38. R. 16. T. 38·4°. Urine yellow, turbid, somewhat filamentous, alkaline, and albuminous. Sp. gr. 1020 at 25° R.

10th.—P. 40. R. 20. T. 38·8°. Urine yellow, turbid, slightly filamentous, and albuminous; sp. gr. 1020 at 21° R. (26·3° C). The swelling could no longer be detected by examination per rectum.

11th.—P. 40. R. 16. T. 38·3°. Urine yellow, turbid, slightly filamentous, strongly acid, albuminous; sp. gr. 1032 at 13° R.

12th.—P. 38. R. 16. T. 38·2°. Urine yellow, very cloudy, somewhat filamentous, strongly alkaline; sp. gr. 1032 at 13° R.

13th.—P. 38. R. 14. T. 38·3°. Appetite continued good. Urine yellow, very turbid, filamentous, alkaline; at 14° sp. gr. 1029, and albuminous.

14th.—P. 36. R. 12. T. 38·2°. Urine yellow, very turbid, filamentous matter in exceedingly small quantity, strongly alkaline, albuminous. Sp. gr. 103° at 11° R. (13·7° C).

15th.—P. 36. R. 12. T. 38·2°. Urine sp. gr. at 15° R. 1026; otherwise the same as on the 14th.

16th.—P. 38. R. 11. T. 38·2°. Urine of a bright orange-colour, turbid, filamentous, alkaline, albuminous. Sp. gr. at 15° R. 1021.

17th.—P. 34. R. 12. T. 38·1°. Urine yellow, turbid, slightly filamentous, alkaline, albuminous; at 16° R. sp. gr. 1027.

18th.—P. 40. R. 16. T. 38·6°. Urine yellowish, very cloudy, filamentous, alkaline, albuminous; sp. gr. at 17° R. 1037.

19th.—P. 38. R. 14. T. 38·5°. Urine of a dirty orange-colour, turbid, non-filamentous, alkaline, albuminous. Sp. gr. 1038 at 13° R. (16·3° C).

20th.—P. 38. R. 12. T. 38·3°. Urine dirty yellow, very turbid, slightly filamentous, alkaline, albuminous. Sp. gr. 1033 at 13° R.

21st.—P. 40. R. 12. T. 38·2°. Urine dirty yellow, turbid, [illegible]entous, alkaline, albuminous. Sp. gr. 1025 at 19° R.

22nd.—P. 38. R. 14. T. 38·7°. Urine yellow, turbid, faintly filamentous, alkaline, albuminous. Sp. gr. 1011 at 20° R.

23rd.—P. 40. R. 16. T. 38·3°. Urine yellow, turbid, filamentous, alkaline, albuminous. Sp. gr. 1015 at 16° R.

24th.—P. 36. R. 16. T. 38·6°. Urine of a grey-yellow colour, turbid, non-filamentous, alkaline, and albuminous. Sp. gr. 1026 at 14° R.

25th.—P. 40. R. 16. T. 38·8°. Urine yellow, turbid, filamentous, alkaline, albuminous. Sp. gr. 1034 at 16°.

26th.—P. 40. R. 20. T. 38·9°. The first sound of the heart had a distinctly metallic ring, and was louder than the second. The dull sound was very plainly heard in places on percussion; it once occasioned cough. From the above it was decided that a new lobular disease of the lung, though to a slight degree, had occurred. Urine yellow, turbid, scarcely any filamentous material present, alkaline, traces of albumen. Sp. gr. 1026 at 14° R.

27th.—P. 44. R. 20. T. 38·8°. Urine of a slight reddish-yellow colour, turbid, non-filamentous, alkaline, albuminous. Sp. gr. 1028 at 13° R.

28th.—P, 44. R. 30. T. 38·8°. Urine yellow, turbid, non-filamentous, alkaline, albuminous. Sp. gr. 1027 at 14° R. (17·5° C).

29th.—P. 40. R. 20. T. 38·2°. Urine yellow, turbid, filamentous, neutral, albuminous.

30th.—P. 40. R. 16. T. 38·5°. Colicky pains very violent. Urine yellow, turbid, filamentous, alkaline. Sp. gr. 1034 at 15° R. (18·7° C.)

July 1st.—P. 40. R. 12. T. 38·3°. Urine orange-coloured, turbid, filamentous, alkaline, scarcely any traces of albumen to be detected. Sp. gr. 1036 at 18°. (22·5° C.)

2nd.—P. 48. R. 18. T. 38·5°. Symptoms of pain less violent. The systolic sound of the heart louder than the diastolic, and has a metallic ring. Urine reddish-yellow, turbid, non-filamentous, alkaline, slightly albuminous. Sp. gr. 1034 at 18°.

From the 3rd to the 6th the conditions were much the same. Appetite good. Examinations of urine yielded the following results:—

3rd.—Yellow, turbid, slightly filamentous, alkaline, and very slightly albuminous. Sp. gr. 1030 at 20°.

4th.—Yellow, turbid, flaky, alkaline, albuminous. Sp. gr. 1033 at 20° R.

5th.—Orange-coloured, cloudy, filamentous, alkaline, free from albumen. Sp. gr. 1043 at 20° R.

6th.—Yellow, very turbid, non-filamentous, alkaline, albuminous. Sp. gr. 1048 at 16°. (20° C.)

7th.—P. 44. R. 20. T. 38°. Urine greenish-black, turbid, non-filamentous, alkaline, with traces of albumen. Sp. gr. 1045 at 20° R.

8th.—P. 40. R. 18. T. 38°. Urine dirty yellowish-grey, very cloudy, gelatinous, thick, non-filamentous, alkaline, slightly albuminous. Sp. gr. 1046 at 18° R.

9th.—P. 46. R. 52. T. 38·4°. Artery tense, vein distended. By auscultation at the heart a prolonged blowing, systolic sound was heard. The systolic sound was somewhat louder than the diastolic. The animal maintained a stretching or extended position, as if about to micturate; it groaned and evinced symptoms of pain. Urine of a dirty brown-colour, turbid, non-filamentous, alkaline. Sp. gr. 1045 at 19° R. Traces of albumen were present.

The great number of respirations per minute stood in no relation to that of the pulse and increase of temperature; therefore, taking into consideration the above phenomena, it was considered to be due to the circulatory apparatus, for no other cause could be detected. The frequency of the respirations was partly attributed to the abdominal pain.

10th.—P. 44. R. 32. T. 38·4°. The heart symptoms were the same as on the 9th. The submaxillary veins were not tense, but the pectoral, brachial, and posterior saphena veins were greatly distended. At the inferior part of the jugular a venous pulse was distinctly visible. The beats of the heart were audible on both sides, without the ear being placed close to the chest. The mucous membrane was strongly injected. Urine grey, turbid, filamentous, alkaline, traces of albumen. Sp. gr. 1040 at 20° R.

11th.—P. 44. R. 34. T. 38·4°. Urine reddish-brown, with

a thick, flaky, greyish-yellow precipitate; it was also turbid, non-filamentous, alkaline, with traces of albumen. Sp. gr. 1047 at 16 R.

12th.—P. 60. R. 32. T. 38·6°. Appetite bad. Urine dirty yellowish-brown, turbid, flaky, alkaline, with traces of albumen. Sp. gr. 1042 at 16° R.

This condition remained much the same until the 16th. The urine presented the following characters on the respective dates:—

13th.—Dirty orange-coloured, turbid, alkaline, albuminous. Sp. gr. 1054 at 14°.

14th.—Dirty greyish-yellow, thick, gelatinous, turbid, alkaline, albuminous. Sp. gr. 1049 at 14° R.

16th.—P. 44. R. 18. T. 38·6°. Appetite good. Abscesses have formed on the elbow and scrotum. Urine yellow, turbid, scarcely any filamentous material present; it was alkaline, and free from albumen. Sp. gr. 1040 at 15° R.

17th.—P. 48. R. 18. T. 38·5°. Urine yellow, like yoke of egg; cloudy, filamentous, alkaline, and free from albumen. Sp. gr. 1020 at 18° R. (22·5° C).

18th.—P. 52. R. 20. T. 38·9°. Urine orange-yellow, cloudy, with traces of albumen. Sp. gr. 1027 at 18° R.

The animal remained in much the same state until the 26th. The appetite was always good, yet emaciation was progressive. The animal was continually lying, and consequently many litter sores were produced. On the 26th the patient could no longer stand, and died the succeeding night.

The following was the condition of the urine up to the 25th:—

20th.—Orange-coloured, turbid, alkaline, albuminous. Sp. gr. 1042 at 15° R.

21st.—Yolk yellow, turbid, with a white precipitate, alkaline, with traces of albumen. Sp. gr. 1032 at 20° R. (25° C).

22.—Superior layer reddish, and tolerably clear, with a pale-yellow precipitate; turbid, alkaline, albuminous. Sp. gr. 1040 at 15° R.

23rd.—Bright yellow-colour, flaky and cloudy precipitate; the superior layer reddish and tolerably clear, alkaline, with traces of albumen. Sp. gr. 1037 at 15° R.

24th.—Yellow, turbid, slightly filamentous, alkalin traces of albuminous matter. Sp. gr. 1020 at 16° R.

25th.—Dark-yellow, turbid, alkaline, albuminous. 1025 at 16° R. (20° C).

AUTOPSY.

Eight hours after death.—On the scrotum was an u spot, which led, in the course of the thickened spermat to an abscess.

Between the superior and inferior layer of the colon, t a sac about 25 centimeters long and the same in which was completely filled with ingesta and caseous pu was connected with the superior colon by means of two o the size of hens' eggs, so that a free communication wa lished between the colon and the sac.

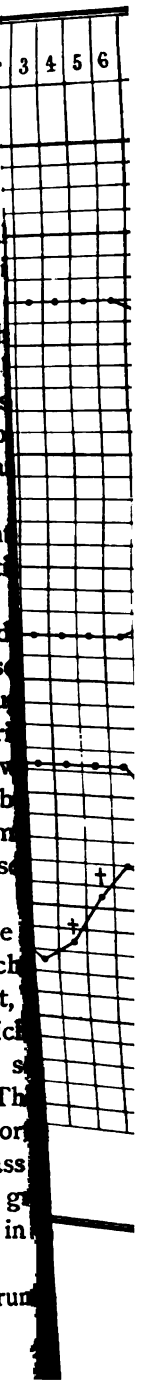
The sigmoid flexure of the colon had become adheren bladder, but no considerable thickness or new formati present at the union.

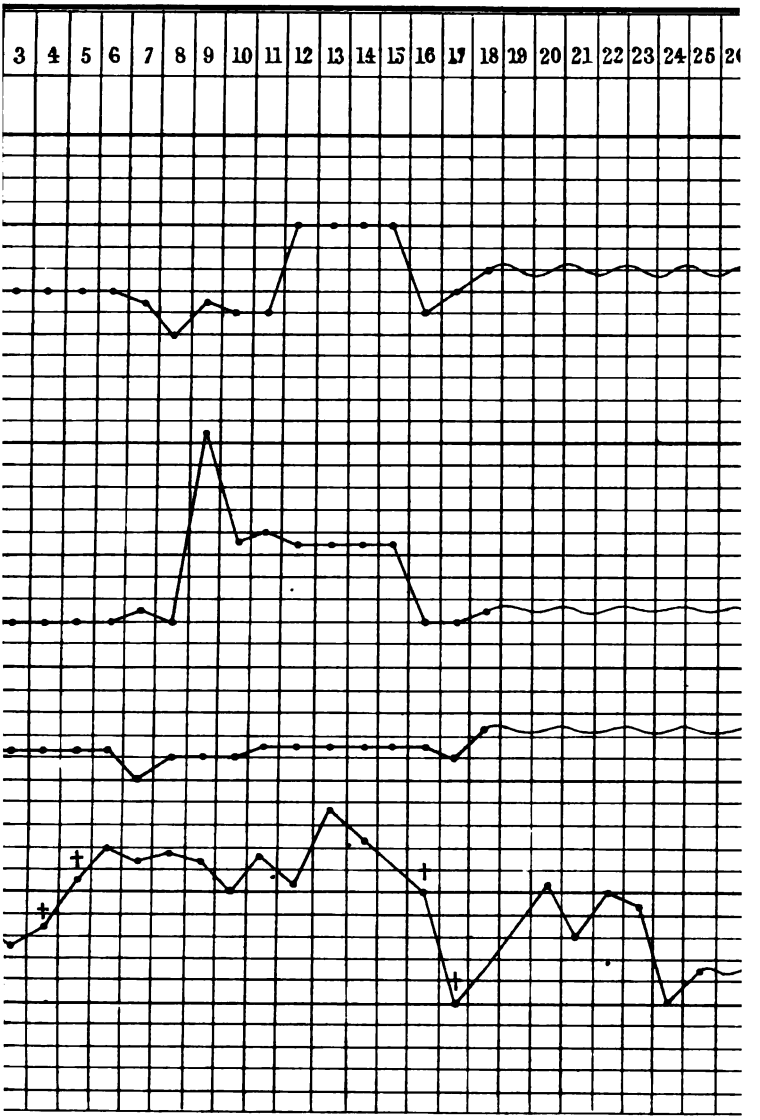
There was a grey and red-coloured thrombus situated anterior mesenteric artery; the walls of the artery its considerably thickened, the *tunica intima* being rou fissured. There was likewise a thrombus in the super artery; this was of a greyish red-colour, and the vessel w thickened and rough at the point where the thromb situated. Farther down the course of the artery, throm softer consistence were present. The same was the cas ileo-cæcal artery.

The superior cœlic artery was so interrupted by the mentioned sac, that its walls ended in a *cul-de-sac* on each

There were two enlargements, the size of a man's fist, neighbourhood of the superior mesenteric artery, whic connected with the undermentioned abnormal veins, s they might be said to be a continuation of the same. Th veins had a nodulated appearance, and the greater por them had become metamorphosed into a cord-like mass on section, presented, in some parts, a firm, fibrous, g yellow texture, partly grown to the walls of the vein, in parts it was of a caseous, friable nature.

The above-mentioned swelling had dry, caseous, crum





Papyrotype.

contents, which, when acted upon by spirit, became dissolved; thus disclosing the thickness of its walls—which in places were half a centimeter thick, and also their fatty and fissured *intima*, to our view.

In the liver the acini were plainly visible, being of a grey colour near the periphery.

The spleen was flaccid, and presented cicatrices on both surfaces and borders.

The left kidney presented several cicatrized contractions; the other parts were of a yellow, red, or grey colour, and on the whole considerably shrivelled.

The right kidney was firmer and more sanguine, but in other respects resembled the left. Both renal arteries were aneurismally enlarged, and their tissues thickened; the *tunica intima* was rough and uneven, the left renal artery being already calcified.

In both arteries there was a partly grey and partly red-coloured thrombus, the right containing one and the left two strongyli.

The bladder was abnormally large, and the walls thin; it contained a little urine, which offered the following characters:—

Yellow colour, very turbid, slightly filamentous, acid. Sp. gr. 1029 at 15° R. (18·7° C). It contained more albumen than that examined during life. Microscopically inspected, round and epithelial cells were seen.

The bladder was (as mentioned above) united to the colon.

The right ureter was abnormally dilated; it was filled with urine, which had a slight yellow colour, was turbid, very filamentous, acid, albuminous. By the microscope, epithelial and round cells were detected, which presented the most varied sizes, and granules.

Both lungs contained air. The right was filled with blood in its inferior half, firm in its texture, and presented nodules of various sizes and firmness to the touch. The most recently-formed nodules, when cut, offered a cuneiform shape; they were somewhat firm in texture and of a dark-red colour. The older ones were of a grey-red or grey-yellow colour, and dry and firm; they were round in shape, and encapsuled in a

fibrous layer, and their contents were of a caseous consistence, which in some cases was brittle and more or less dry.

The anterior lobe of the left lung contained many lobular and nodular swellings, which were partly purulent and partly dense and fibrous.

In the pulmonary artery of the left lung there was a thrombus about three centimeters long, yellowish white externally and red internally, and tolerably firm. Fresh thrombi had formed on both sides, and these were partly red and partly yellow in colour.

The right side of the heart was very much dilated. Its walls had a thickness of about one and a half centimeters.

The left side was hypertrophied.

The endocardium was somewhat red and rough, especially about the level of the *musculi papillares*, and on the anterior surface of the mitral valve there was also a fibrous mass, about the size of a lentil seed.

(*To be continued.*)

Editorial.

THE POSITION OF COMPARATIVE PATHOLOGY IN BRITAIN.

COMPARATIVE PATHOLOGY cannot claim a home in Britain; for though it receives a certain amount of study by some members of the profession, yet beyond their ranks it can scarcely be said to be recognised; and those veterinary surgeons who have done their utmost to bring it into notice, and have spared no efforts to demonstrate its value to medicine in general, are too few to produce any perceptible influence in promoting its general recognition. Since the days of John Hunter, there have, it may truly be said, been no students of human medicine who have ventured into the larger domain of comparative pathology in these islands; and so it happens, doubtless, that human and veterinary pathology have made so little progress among us. The history of medicine gives us manifold proofs that the physicians of many centuries preceding our own, were not satisfied with studying the maladies of their own species, but also endeavoured to learn as much as they possibly could of those to which the lower animals were liable; and in this way they acquired a much more comprehensive knowledge of pathology in general, and were better qualified for their more special

task, than they who merely studied the disorders of the higher animal—man.

It is difficult to discover why comparative pathology should be held in such low esteem in Britain, as to be utterly ignored—as if it were something degrading to acknowledge acquaintance with it. In the ranks of the medical profession there is not one who can lay claim to the distinction of comparative pathologist—though there is no scarcity of comparative anatomists of various grades, and though comparative pathology must be of far greater value to the medical profession than comparative anatomy.

This neglect of comparative pathology in this country is not only injurious to the progress of medicine—human and veterinary—but it is also prejudicial to the public interests, not only from a sanitary and medical point of view, but also so far as the suppression of contagious diseases among animals is concerned. For instance, when the Cattle Plague invaded England in 1865, though the medical profession knew nothing whatever of the disease or its history, yet it was the most formidable and successful opponent of those sanitary measures which could alone rid us of the scourge; and the immense losses the country then suffered were due to the mistaken notion of the faculty, that the malady was "spontaneously" generated in the London cowsheds, and that it could be *cured*. And even with this terrible warning before it, we still witness the same exhibitions of uneducated meddlesomeness at times, and particularly in the matter of contagious diseases among animals. The most recent instance of this occurred only a few days ago, when medical men—one of them a F.R.S., even—wrote to the public papers to suggest that the presence of Contagious Pleuro-pneumonia among American cattle was owing to the hardships experienced on board ship!

Not only is comparative pathology neglected as a study by medical men,—and in this an important portion of their curriculum is omitted,—but when they are compelled to notice some particular disease of animals, it is rare indeed that they trouble themselves with inquiring as to what is already known with regard to it, or what members of the veterinary profession have done towards its elucidation. It is quite true that we have had very few among us—indeed, scarcely any—to worthily represent our profession in this direction; for pecuniary and other motives of what we would call the "baser" kind, have been too predominant with those who might, from their position and opportunities, have placed our science in a very different position to that which it now occupies. Nevertheless, this is no reason why what has been accomplished should be utterly ignored, or why students of veterinary medicine should be absolutely despised by those who evidently have no acquaintance with what they have done, and what they have had to contend with.

This is not the first time we have had to complain of the neglect of comparative pathology by medical men, and of the low esteem in which they hold its students. And on the present occasion we have good foundation for our complaint, when we review the proceedings at a

recent meeting of the Pathological Society of London, reported in our last issue, in which the relations of Mammitis in cows to Diphtheria in man were discussed, and when a paper on "Garget," read by a gentleman at that meeting, was asserted to "afford all the present available knowledge on the subject." Judging that the time had come when to be silent, was to appear indifferent to the fate of a branch of science to which we have devoted so many years study, as well as to be careless of the reputation of a profession whose welfare and good name is dear to us, we penned the following letter, which appeared in *The Lancet* for January 25th; and we are glad to learn that it has attracted some attention in the proper quarter, as it may be the means of effecting something of a reconciliation between the two departments of medicine, and promoting the advancement of comparative pathology in this country.

"GARGET" AND DIPHTHERIA *v.* COMPARATIVE PATHOLOGY.

To the Editor of THE LANCET.

SIR,—I have read your report of the meeting of the Pathological Society, at which the relations between the various morbid conditions known to cowmen as "Garget," and Diphtheria, were discussed, and also the editorial remarks on the same subject in *The Lancet*. I am indeed greatly surprised at the extremely meagre amount of knowledge displayed in the investigation of this supposed relationship, and am especially astonished at the way in which the researches of members of the veterinary profession are ignored in a matter to which such great importance was attached at the meeting above alluded to. It would almost appear that Messrs. Power and Smee had discovered a new bovine malady, and that there was something terribly mysterious and unfathomable about it. Mr. Power starts the alarming notion that certain serious and widely extended outbreaks of Diphtheria in man may be due to this cowkeeper's "Garget"; and yet, after expending considerable time and patience in attempting to trace the origin of these epidemics, he does not seem to have troubled himself to ascertain what we really know of "Garget," or what it is. He confesses that he was only able to glean information from *non-medical* witnesses! Surely, in launching such a formidable hypothesis—one calculated to give rise to grave anxiety, or even panic, among the consumers of milk—such a competent member of the medical profession would have thought it necessary to learn all he could as to what this so-called "Garget" is, and whether it was likely to be the real source of the Diphtheria visitations.

And Mr. Smee does not appear to have made himself very well acquainted with the subject before bringing his paper before the Pathological Society; notwithstanding the fact that he instituted inquiries in different parts of the country, and obtained replies from a number of people whose evidence is so contradictory, and betrays so confused a notion as to what they were writing about, that one is forced to conclude that they also were *non-medical* witnesses. Seeing the mystification and confusion existing in the minds of the authors of the two papers read on January 7th, and itself evidently no better informed, we can scarcely wonder that the Society should appoint five *medical* men to make inquiries into the nature, etc., of this Garget.

I would not, perhaps, have requested you to publish anything from me relating to a matter in which it is only too apparent that veterinary science is *de trop*, and its students ignored, had not Mr. Smee rather gone out of his way to assert that he soon found veterinary surgeons knew little of the subject

and that works on veterinary medicine contained very little information about the disease.

Those members of the veterinary profession in this country who have done their best in promoting the advancement of comparative pathology, have every and great reason to complain of the almost systematic manner in which their labours are neglected or ignored by the sister profession when the maladies of animals are under consideration. Heavily handicapped as it has been since its advent in this country, and received none of the encouragement, countenance, rewards, Government grants, or benefactions, without which human medicine would have made but little progress, veterinary science cannot yet show that its path is likely to be much cheered, or its burthen lightened, by the older sister, who has been so greatly aided and carefully nurtured by external influences.

The disease vulgarly known to cowmen and the Pathological Society as "Garget," and to pathological scientists as Mammitis or Mastitis, is one of the most frequent to which bovine animals are liable, and few maladies of animals have been more carefully investigated, or more often receive the attention of veterinary surgeons, notwithstanding Mr. Smee's assertion to the contrary. I do not know a work, English or Continental, on veterinary surgery or cattle pathology, published during this century, which does not treat more or less fully on it, and few, indeed, that I am particularly acquainted with which do not contain more detailed and trustworthy information than is to be gleaned from Mr. Smee's paper. I therefore cannot think that that gentleman was serious in the statements he made as to veterinary surgeons and veterinary literature. If he was, then I can only say that the statements are not supported by facts. With regard to literature, I might give a long list of veterinary authorities who have studied and described the various forms of Mammitis, but I will content myself with referring to chap. 9 of my work on "Veterinary Obstetrics," published more than a year ago, in which it will be seen that Mr. Smee's and your own assertions do not fairly represent the case. With regard to the condition of the milk in Mammitis, in addition to what I have said in the work just alluded to, I would also refer to my manual on "Veterinary Sanitary Science and Police," vol. ii., p. 579, art. "Inspection of Milk." And for a long report on a form of Infectious Mammitis in the Cow, I may call your attention to THE VETERINARY JOURNAL (of which I am editor) for November, 1878, p. 335.

A perusal of the evidence therein adduced will testify that not only have the different kinds of Mammitis been carefully observed and investigated by those who understand the diseases of animals, and are therefore alone competent to treat of them, but that this malady is far from being the trivial and imperceptible disease which Messrs. Smee and Power would have the public believe. That any of the forms of Mammitis will produce Diphtheria in animals—and especially sucking animals—there is not a tittle of evidence to show; and that Diphtheria in the human species may be due to milk drawn from glands affected with Mammitis is unsupported by facts of any kind. Ordinary Mammitis is a common disorder all over the country—indeed, over the world, and large cowsheds are seldom free from it. Diphtheria is, comparatively, and fortunately, a very rare disease. Even during outbreaks of infectious Mammitis, some of which have been extensive and serious, and have continued for a long time, no unusual disorders have been reported as appearing among the people who consumed the milk in the localities in which it was distributed. And in the outbreak recorded by Mr. Power there is all but everything wanting to establish any connection between Mammitis and Diphtheria. What he gives is even less than a mere coincidence, and it is to be regretted that the epidemic should be publicly ascribed to the milk without better and, indeed, the clearest evidence. Much needless

alarm is excited, and sanitary science is certainly not benefited, by the promulgation of such unsubstantial hypotheses.

Some years ago you allowed me to draw attention to the very unsatisfactory position of comparative pathology in these islands, and the injury medical science, no less than the public interests, suffered thereby. Since that time the position has not been improved, so far at least as the medical profession is concerned; and I think I may say, from personal knowledge, supported by such examples as the Pathological and other Medical Societies, as well as medical literature, at times afford, that in no country in Europe do medical men, as a rule (there are, of course, exceptions), know less of the diseases of animals than in our own, and this absence of knowledge exposes them to inconvenience and even ridicule. That a body of medical gentlemen of such acknowledged ability as those who compose the Pathological Society should know nothing, or next to nothing, of a very ordinary and frequent disease affecting the lacteal apparatus of an animal which stands in such close relationship to man as a food-producer, and that it should depute five of its number, who can know but little of animal disorders, to investigate the malady, may well provoke a smile in the ranks of such an assembly, for instance, as the Paris Academy of Medicine, where the value of comparative pathology is understood, and where Bouley, Larcher, Leblanc, Colin, and other veterinarians take their place as members and authorities in their own special department of science.

On behalf of medicine, human and animal, may I not ask if the time has not arrived when that harsh and inflexible barrier, behind which medical men in this country, as a body, have so long fixed themselves, to their great detriment, be thrown down, and the claims of comparative pathology to recognition be admitted? Surely, if physicians and surgeons will discuss the diseases of animals, especially in relation to the public health, they should possess some knowledge of these diseases! The wide chasm which has hitherto been allowed to separate human and animal medicine in Britain must be abridged some time or other. Why not now? I do not know a Continental university which does not have a chair of Comparative Pathology; there is nothing of the kind with us. If a knowledge of natural history, zoology, or comparative anatomy is considered necessary for medical students, and if our universities and medical schools have chairs for instruction in these subjects, it is surely of far greater moment that they should have chairs of comparative pathology—a subject of daily increasing importance.. Establish these chairs, recognise the fact that human and animal pathology are but sections of one great subject, and soon we shall be spared the appointment of committees to investigate animal disorders; the composition of these committees, reminding one of the tragedy of Hamlet *minus* the Prince of Denmark, and such unproductive discussions as we are now familiar with in medical societies. I cannot see any reason why medical men in this country should not be as well acquainted with comparative pathology as their Continental *confrères*, nor yet why they should ignore the fact that there are students of veterinary science who can claim a right to be heard in defence of that science. Medical men in England can well afford to be unselfish and the opposite of ungenerous. That they sometimes appear severely conservative and narrow-minded towards these students, is possibly due to misapprehension and a desire to keep all medical knowledge in their own hands.

I do sincerely trust that you, sir, will lend your aid in promoting a knowledge of comparative pathology in our medical schools. This knowledge is sadly needed, and there is no reason why it should be denied the votaries of medicine.

I have the honour to be, sir, yours most obediently,

GEORGE FLEMING, F.R.C.V.S.,
2nd Life Guards.

January 21st, 1879.

CONTAGIOUS PLEURO-PNEUMONIA AMONG AMERICAN CATTLE.

IT will not surprise those who are acquainted with the history of contagious diseases in animals, to learn that cargoes of American cattle affected with Contagious Pleuro-pneumonia have been disembarked at Liverpool. In this journal we have repeatedly pointed out the fact that we were exposed to importations of contagion from the other side of the Atlantic. So long ago as July, 1878, and so recently as our last issue (p. 95), we insisted on the necessity for watching the cattle traffic with America; but before that period, and while the Contagious Diseases Bill was before Parliament, we wrote to *The Times*, and also furnished both Earl Fortescue and Colonel Kingscote, with irrefragable proof that the disorder did exist in the United States, that these should be placed on the footing of an infected country and scheduled accordingly, and that if they were not, we ran great risk of receiving shiploads of the disease therefrom. The information we then gave to the above-named legislators was imparted to the two Houses of Parliament, but with that extraordinary perversity, incredulity, or whatever else it may be which has distinguished the Privy Council in its dealings with animal plagues, America was allowed to enjoy the privileges of a clean country; and now, after three diseased cargoes have reached us, it is discovered that we were right after all. We claim but little credit for what we have done in this matter, as any one who had devoted himself to the study of contagious diseases could have predicted as easily as ourselves what has actually occurred. But, unfortunately, we have stood alone in pointing out the great necessity there is for pursuing this study in our veterinary schools and by practitioners, and we have even been sneered at by those who are mainly, if not altogether, responsible for the terrible ravages these scourges have produced in this country, and who have even had the temerity to confess that they did not see how a knowledge of the history of contagious diseases could prevent their occurrence!

It has been known for more than thirty years, that the disease in America was positively the same as that with which we are so painfully familiar, and any one who cares to refer to the splendid and elaborate "Report of the Commissioner of Agriculture on the Diseases of Cattle in the United States," published at Washington in 1871, will have no reason to doubt the accuracy of our statement, or to exculpate the Privy Council for a grave error of omission or commission, which will happily be repaired on the third day of the present month.

It is more than strange that the United States Government lost sight of this report, and that they allowed their country to be declared free from infection when our Government was discussing the question as to what countries should be scheduled; and even when diseased cattle arrived in this country, that they should still plead ignorance, and remit the question to the consideration of several professional gentlemen of eminence and authority, whose reports are only a re-echo of our own.

In cattle-dealing, as in horse-dealing, conscientious scruples appear to be in abeyance when contagious diseases or other troublesome matters intervene, and governments act sometimes, we think, as individuals only too often do—regard their own interests more than those of their neighbours. And to show how little reliance can be placed upon consular reports, and how easily consuls are "gulled," the gist of the information received from them from America, when our Government discovered Pleuro-pneumonia was prevalent there, was that although a mild type of the disease was known to exist in various parts of the United States, "it is not thought to be of the malignant and infectious character which the same disease assumes in

Europe. It is disputed, indeed, that in its American form the disease is infectious at all."

Our Government has been so deaf to all representations on the subject, and the "trade" on both sides of the Atlantic had so much influence in concealing the existence of the disease, that when it was at last unmasked, it was found there was no provision whatever at Liverpool for the slaughter of the infected droves landed at its wharves, and the regulations had to be violated in order that they might be carried into effect. Further comment is unnecessary.

THE WAR IN ZULU-LAND AND THE "HORSE-SICKNESS" OF SOUTH AFRICA.

THE serious aspect of affairs in the colony of Natal has necessitated the sending out from England a force of cavalry, artillery, and land transport, with about two thousand horses—a voyage occupying about thirty days. To maintain so large a number of horses in health and efficiency, so as to enable the force to commence active operations as soon as landed, will demand all the care and attention of the nine veterinary surgeons who accompany them. But the disorders and casualities incidental to the long voyage are as nothing when compared with the losses which may befal the horses on disembarkation, from the disease known as "Horse-sickness," to which we have referred in this journal for August, 1878 (p. 100), and also in our last issue (p. 97). As we have pointed out, this serious equine malady prevails from the Orange River on the south, and as far as Europeans have penetrated from the Cape side; it has proved to be one of the greatest drawbacks to successful travelling in South Africa, and probably exists in as virulent a form in North Africa. Fortunately, however, it only prevails at a certain season, manifesting itself in some districts in November and December only, while in others again it commences about the beginning of February and continues until April, or even exceptionally into May. In Zulu-land—the scene of operations at present—February, March, and April are the dangerous months; so that the force just dispatched from this country will, we fear, not escape it entirely. However, we trust that the experienced and zealous veterinary surgeons belonging to the Zulu-land Army Corps will be successful in averting its ravages, or at least in reducing them to a very low percentage. One thing we do anticipate, and that is that our knowledge of the disease—extremely imperfect at present—will be largely increased, and that this scourge, which, looking at its hurtful influence on the prosperity of our South African Colonies, should long ago have received scientific investigation, will be made amenable to prophylactic or curative measures.

RE-ESTABLISHMENT OF VEINS OCCLUDED BY THROMBOSIS.

IN the *Progrès Médical*, Petres gives the following account of the processes by which the circulation is re-established in veins occluded by Thrombosis:—

In the first few days following obliteration the vasa vasorum dilate, the lining membrane of the vein thickens by proliferation of its elements, forming round the periphery of the clot a sheet of embryonic connective tissue, into which the vasa vasorum send numerous capillary prolongations. During this time the clot itself becomes atrophied and disintegrated, the red corpuscles lose their colouring matter, becoming yellow and granular. As the newly-formed tissue advances towards the centre of the lumen of the vessel, it

replaces the disintegrated clot until the latter is entirely absorbed, and the occlusion is maintained by the new formation. This new formation may then undergo two distinct kinds of change—(*a*) fibrous organization common in arteries and less so in veins; or (*b*) cavernous metamorphosis common in veins. This cavernous metamorphosis is the result of the incessant dilatation of the new vessels traversing the embryonic tissue, and the contraction and absorption of the partitions which separate them, until they unite to form a few voluminous canals, and at last into one common cavity. All the different stages of this process may be noticed at one time in the same Thrombus.

DETERMINATION OF SEX BY THE DATE OF CONCEPTION.

IN the *Boston Medical and Surgical Journal* for September, 1878, Dr. Swift, alluding to this subject, remarks: "While studying the reproductive organs in the microscopical laboratory of Dr. Carl Heitzmann, of New York, last winter, Dr. Heitzmann advanced the following theory in regard to the determination of the sexes. The ovum represents the female element, the spermatozoa the male. We know that it requires only a few spermatozoa—perhaps a single spermatozoon—to impregnate an ovum. If an ovum becomes impregnated by a few spermatozoa, the female element will be in excess, and the result will be a female. If, on the other hand, a good many spermatozoa impregnate the ovum, the male element will preponderate, and a male will result. Now, if an ovum is high up—that is, in the ovary or at the fimbriated extremity of the Fallopian tube, probably only a few spermatozoa will come in contact with it. But if the ovum is low down, then many spermatozoa come in contact with it.

"If menstruation and ovulation are dependent the one on the other, as many authorities affirm, then the situation of the ovum may be determined by the menstrual period. During the interval between the periods the ovum is in the ovary. Just before the flow begins the ovum may be on the surface of the ovary, or in the fimbriated extremity of the Fallopian tube. As menstruation goes on the ovum descends, and the flow may entirely cease before the ovum is discharged. Then it is low down in the Fallopian tube, or even in the uterus itself.

"Now, if coition takes place during the interval between the two periods, or just before menstruation begins, the ovum being high up, only a few spermatozoa pass up the Fallopian tube and reach it; but if coition is just after menstruation, then the ovum is within the reach of many spermatozoa.

"Stock-breeders understand this. If they want a female, they put the two sexes together at the beginning of the rutting period; but if a male is desired, they wait until the female has been in heat some time.

"During my term of service in the Boston Lying-in Hospital, I had several opportunities of testing this rule, and I have collected twenty cases which bear it out. I excluded those cases where there seemed to be any doubt at all in regard to the statements, and all married women, except three, where the exact dates were given. In twelve cases the data were obtained before delivery, and in all these the sex was predicted correctly."

After giving details of these cases, the doctor adds: "I am aware that this theory conflicts with most, if not all, of the accepted theories on the subject of conception, and that the cases here presented are too few in number to establish any exact rule; but it certainly seems to me that the results obtained are extremely interesting, and would warrant a further investigation of the subject."

CAN THE MILK OF PHTHISICAL COWS PRODUCE TUBERCULOSIS?

(THE question whether the milk of cows affected with Phthisis or Tuberculosis will produce this disease in the creatures which ingest it, is of extreme importance in a sanitary and pathological point of view, and we have often brought it before the public, as well as the medical and veterinary professions, in this country. Indeed, we were the first in England to draw attention to the matter, and to urge the necessity for closely studying it. Strange to say, it has received but little, if any, notice from the medical or sanitary authorities of these kingdoms, though we hear much from them of the value of preventive and State medicine, and its neglect by the Government. In other countries, as we have shown, this silence or indifference has not existed; and the question, first raised in France and Germany, has been closely examined, experimentally and otherwise, by veterinarians and medical men, and though it has not yet been finally decided, yet it is full of interest and importance to the comparative pathologist and sanitarian. We are therefore again desirous of referring to it, and laying stress upon the necessity for keeping it in remembrance when treating of sanitary subjects; and with this object, we will from time to time notice the advances which have been made with regard to it, as we have already done, and will continue to do, in the case of Anthrax.

These remarks are intended to preface the translation of an excellent and concisely written paper with the above heading, read before the Société de Médicine Publique, by Doctor Vallin, Professor at the Val-de-Grâce Hospital, Paris, a short time ago, in which all the facts and arguments pertaining to the question are placed before us, and impartially examined.)

When my learned friend, M. Villemin, made known his early inquiries into the inoculability of tubercle, a certain number of practitioners did not fail to say and to write, "What is the use of these researches? of what advantage is it to our patients to know that we can really make them tuberculous? The smallest quantity of a good remedy against Phthisis would better serve our purpose and theirs." For a long time we have been aware of the pretentions and the disdain of those who attribute thus the monopoly of sound practice, and for whom all progress is limited, to the discovery of an empirical formula or a new drug. To these contemners of physiological and scientific researches we would reply, "That in the cowsheds of our large cities the majority of cows become phthisical; are you, therefore, quite certain that the uncooked milk, yet warm from the udder of the cow, is not capable of making those children tuberculous who are fed on it daily? If this transmission of Tuberculosis by milk were demonstrated, of what value would the long series of remedies against Phthisis be, in the face of the prophylactic indication which such a demonstration would furnish? If you deny this transmission, is your conviction founded on a sure basis, and would you not hesitate to give to your own child the milk drawn from a cow which you knew to be phthisical? If the question is not decided, if there remains the slightest uncertainty with regard to it, what danger does the public health not incur? We punish dairymen who add water to milk: what measures should we not adopt against those who sell milk capable of giving rise to such a frequent and serious malady, that of every three adults who die one perishes from tubercle?"

I hope to be able to demonstrate that these are not purely imaginary fears, nor sentimental reflections on a gratuitous hypothesis. In France, everyone denies the transmission of Tuberculosis by the milk of phthisical cows; but in nearly every other country in Europe—in England, Switzerland, Bavaria, Saxony, Prussia—the most eminent professors of the veterinary schools con-

sider this transmission, if not demonstrated, at least as probable.* And the most serious part of the business is, that those who deny it have made no experiments, while those who have experimented have transmitted the tubercle.

This simple enunciation shows that the question is worthy of attention. For my part, I shall guard myself against expressing an opinion on a subject so uncertain, and on which I am not yet fully informed; but it seems to me, that instead of expending much time in a dissertation on the question as to whether, theoretically, transmissibility is a little less probable than non-transmissibility, it would be more simple and scientific to subject some animals to experiment, and to await the result before arriving at a verdict. In this first memoir, I shall confine myself to exposing the actual state of science with reference to the subject, and to give a balance-sheet of the researches undertaken in various countries. I hope to be able to present at a later period the result of my own experiments, already commenced, but which I have not yet completed.

In France, the attempts to transmit tubercle by the ingestion of tuberculous matter itself has alone absorbed attention; those who contest the affirmative results obtained by Villemin, Chauveau, Saint-Cyr, Viseur, etc.,—those who do not admit the absorption of the virus by the digestive mucous membrane—have naturally refused to accept the result of the researches on the action of milk derived from phthisical animals. But on the latter point I only find affirmations—I do not discover any experiments. If I consult the labours of M. Colin, of Alfort, for example, I note that the ingenious physiologist has obtained no result from the ingestion by the stomach of tuberculous matter—blood, saliva, serum, or bronchial mucus; he denies the value of the experiments made by those who have been successful; he denies the virulence of tuberculous matter itself; he rejects, as contrary to the most positive scientific evidence, the absorption of the virus by the digestive mucous membrane.† But I nowhere find special mention of personal experiments made with the milk, though it is not doubtful that M. Colin should absolutely refuse to believe in any noxious influence in the milk of tuberculous cattle.

M. Reynal, in his *Traité de Police Sanitaire*, devotes a paragraph to the use of milk from phthisical animals. With the great practical sense which characterizes his book, the learned director of the Alfort School admits that this milk is not rich in solid matters, that it has only a feeble nutritive value, and is an inferior marketable commodity, but he adds—"No properly observed fact authorizes the conclusion that it has particularly injurious properties, and consequently as requiring measures to restrict its consumption.‡ In this brief chapter Reynal insists, in several places, on this innocuousness, though neither directly nor indirectly does he make any allusion to experiments which might serve as a precise base for his opinion.

M. Bouley, who himself has examined M. Viseur's cats, ‖ and who had seen the *formidable* lesions in Saint-Cyr's pigs, does not deny the effects of tubercle introduced into the digestive organs, but he limits this virulence to the tuberculous matter, and does not think of extending it to all the substance of the phthisical animal.§ He thinks there is no danger in using, as food, the fleshy parts which do not contain nodules or tuberculous glands. But in the

* [We are not aware that any veterinary professors in England have ever studied or expressed an opinion on this subject.—ED. *V. J.*]

† *Colin.* Bulletin de l'Academie de Médicine, 1873, Vol. ii., p. 557, 629.

‡ *Y. Reynal.* Traité de la Police Sanitaire des Animaux Domestiques, Paris, 1873, p. 727.

§ *Bouley.* Chronique Mensuelle (Recueil de Méd. Vétérinaire, 1874, p. 181).

‖ *Ibid.* Recueil de Méd. Vétérinaire, 1873, p. 568.

face of foreign researches which we will cite hereafter, and to which he attributes great value, M. Bouley, whose mind is so largely open to progress and to new researches, expresses the greatest reserve with regard to the milk of these animals. In 1876, the Consultative Committee of Public Hygiene was consulted as to the noxiousness of milk from cows affected with Aphthous Fever, and in the learned report the Inspector-General of the Veterinary Schools drew up on this subject, he speaks of the milk obtained from phthisical cows in the following terms:—"With regard to the question of the possible transmission of Tuberculosis to the human species, by the continued use of milk from cows affected with Pulmonary Phthisis, it is of too great importance for me to treat it as a merely incidental matter. I believe that it deserves to be the object of a special study on the part of the Committee. I shall merely content myself with saying that the experiments of Professor Gerlach of Berlin, those of Professors Chauveau and Saint-Cyr, of Lyons, and finally of M. Viseur, Departmental Veterinary Surgeon, of Pas-du-Calais, on the ingestion of tuberculous matters and the effect of their absorption by the digestive organs, should cause reflection. Without attempting at present to solve the question as to the contagion of Tuberculosis, I think it is prudent to treat it as if it were a reality, and from this point of view, *that every advantage is to be derived from prohibiting the consumption of the milk of tuberculous cows.*"*

We are glad to be able to shelter ourselves beneath the authority of so competent a judge, and the preceding conclusion, which we would otherwise formulate ourselves, proves that new researches are neither useless nor inopportune.

M. Chauveau, the most ardent apostle of the transmissibility of Tuberculosis by the digestive canal, himself believes also, and for a long time, that the tuberculous matter alone will transmit the disease. "In principle," he says, "we can only transmit the malady by the diseased organs or their products." † From a phthisical cow he took a healthy non-tuberculous gland, and from it expressed some fluid the inoculation of which was sterile; on the other hand, inoculation was completely successful with the fluid from a tuberculous gland of the same animal. He does not believe that a healthy calf drawing the milk from the unaffected udder of a phthisical cow will contract the malady, but that infection will assuredly take place if there is ulceration or tuberculous degeneration of the mammary gland. ‡ Chauveau knew of cases of transmission of Tuberculosis from phthisical animals to their progeny through the medium of the milk, but he thinks the facts pertaining to other than the bovine species as not very conclusive. We shall see presently that several authors—Bollinger and Gerlach in particular—have succeeded in their experiments with calves, and that their results are in contradiction with the principle formulated by Chauveau. The learned professor of Lyons does not appear to have personally made any experiments with tuberculous milk.

After such masters, no one in France would think of venturing on researches which require a long time, are expensive and difficult, and the non-success of which can, in a manner, be predicted. In default of experiments, M. Boulay, of Avesnes, makes a judicious observation. Phthisis among cows is very common in the arrondissement of Avesnes, and the slaughter-house not being

* *Ibid.* Rapport sur une Maladie transmise à l'Homme par l'usage du Lait de Vache atteint de Peripneumonie (Recueil de Travaux du Comité Consultatif d'Hygiene Publique de France, 1877, Vol. v., p. 445).

† *Chauveau.* Séance of the Academy of Medicine of Nov. 17, 1868. Congress de Lille of 1874, p. 943.

‡ Fleming (*loco cit.*) and Van Hertsen, inspector of abattoirs at Brussels (Rec. de Méd. Vétérinaire, Vol. li., p. 181) both mention that alterations in the mammary glands of phthisical cows are rather common.

under observation, as there is no inspector, the butchers kill and dispose of all the cattle—healthy or diseased. If the milk, says Boulay, is capable of transmitting Phthisis, it would be important to compare the frequency of the disease in cows with the same malady in man in this non-inspected arrondissement, and that of Lille, where the surveillance of the abattoirs leaves nothing to be desired.* The author doubtless means it to be understood that where the abattoir is under inspection, the owners of cows are interested in having them killed whenever they exhibit the earliest symptoms of Phthisis, because at a more advanced stage of the malady they would be refused at the abattoir and sent to the knacker. The remark of M. Boulay is worthy of notice, and without overlooking the difficulty in obtaining such statistics, it is to be desired that this appeal should be listened to in his department or in similar localities.

M. Viseur, of Arras, remarks that in the country care is observed in giving the milk from the same cow to children artificially reared, and the veterinary surgeons anxiously recommend that this milk should not be obtained from cows which cough.†

Such is about the gist of the opinions given in France by the most competent authorities, as to the noxiousness of the milk of tuberculous animals.

Nowhere can I find mention made of personal experiments, but I have, on the contrary, found convincing reasoners who affirm, *à priori*, and without having made experiments, the absolute innocuousness of the flesh of such animals; for them, the doctors who suspect the milk of phthisical cows are worthy descendants of the physicians ridiculed by Molière. Let us proceed to more serious arguments.

C. Gerlach, then veterinary professor at the Veterinary Institute of Hanover, commenced his researches in 1866, soon after the appearance of the first publications of Villemin, and terminated them in 1869. In his memoir,‡ which shows that he studied the transmission of Tuberculosis by inoculation, and by ingestion in the digestive canal, he devotes a very important part to researches into the effects of feeding with the milk of a tuberculous cow. The animal was seven or eight years old, very emaciated, with short respiration, a husky cough, and dry *râles* on auscultation. It still yielded 1½ litres of milk daily, but this quantity fell gradually to 500 grammes during the last month. At the autopsy, nodules were found beneath the pleura, and very advanced tuberculization of both lungs. The experiments were conducted on two calves, two pigs, one sheep, and two rabbits. These animals took for a variable time (from 21 to 50 days), a certain quantity of this uncooked milk. At the autopsy of all of them—with the exception of one of the calves which died accidentally, and too early, of Aphthous Fever, then epizöotic—were found tuberculous nodules beneath the pluræ and in the pulmonary parenchyma, caseous masses in the mesentery, bronchial glands, etc. As an example, we will give a *resumé* of No. xii. in the memoir:—

Calf eight days old, nourished for fifty days almost exclusively on the milk of a phthisical cow—at first 1 litre per diem, and later 300 grammes, or an average of 650 grammes—amount to a total of 32 litres during fifty days. The animal's health did not appear to be markedly disturbed, and 100 days after the commencement of the experiment—50 days after the milk was withheld—it was killed. The pleuræ were found covered with false membranes studded with nodules the size of a pin's head; immediately beneath the pleura nodules protruded, varying in size from that of a pea to a millet

* Recueil de Méd. Vétérinaire, 1873, p. 578.

† Recueil de Méd. Vétérinaire, 1873, p. 885.

‡ *A. C. Gerlach.* Ueber die Impfbarkeit der Tuberculose und der Perlsucht bei Thieren sowie über die Uebertragbarkeit der letzren durch Futterung. Virchow's Archiv, 1870, pp. 290, 307.

seed, fixed in the pulmonary tissue. Only eight miliary nodules were found in the interlobular spaces; these nodules were transparent, grey, very firm, and on section showed in the centre a more transparent part; one of them, more voluminous, contained in the middle a small, yellow, caseous mass. There was very great tumefaction of the bronchial glands, and in the centre of these a caseous matter already infiltrated with saline deposits. The mesenteric glands were twice their normal volume, and completely transformed into caseous matter. All these lesions are identical with those observed at the commencement of Consumption in the cow, and a very careful microscopical examination fully confirmed this identity.

The other calf, which died accidentally after taking the milk for ten days, only presented at the autopsy inflammation of the small intestine, and a slight swelling and "succulence" of the mesenteric glands, such as always exists in the Enteritis accompanying Aphthous Fever. Nowhere was there any appearance of congenital tubercle.

Gerlach took care to keep, at the same time, as evidence, animals of the same species and often of the same litter, fed with pure milk, and in these no tubercles were found. It therefore appeared to him impossible to attribute to a mere coincidence the existence of such lesions in five animals of different species, especially as spontaneous tuberculization is very rare in the sheep, and is scarcely known in the pig.

Not only did Gerlach admit that the milk of phthisical cows is hurtful, and specifically hurtful, because it transmits the tuberculization, but he also studied the seat and the ways of infection: the mesenteric glands were constantly diseased and filled with caseous and calcareous deposits; it was by this way, by the digestive surface, that the virulent principle had penetrated and had progressively contaminated all the organism. "It remains to be discovered," he says, "if tuberculization of the lungs is only a secondary infection, resulting from the resorption of the caseous points formed in the mesenteric glands; just as in the rabbit and guinea-pig Tuberculosis is merely the generalization of the infection at first localized in the caseous centre at the point of inoculation; or rather if, on the contrary, the blood of the entire organism is not infected at once."

We shall not follow Gerlach in this interesting discussion, and it would be premature to insist on the prophylactic measures he recommends; we shall only give a summary of the conclusions with which he terminates his memoir:—

"The extirpation of Consumption in cattle should be energetically carried out. In a herd the disease is propagated by the milk an infected cow gives to its progeny, so that it is rare that in a pasture cases of the disease are isolated. There are herds which are ravaged by it, while alongside of them are others which are perfectly free from it. All suspected animals should, therefore, not be allowed to breed; and cows ought not to supply milk to children until their condition as to health is clearly ascertained. As the diagnosis of the malady is difficult, it is necessary, at the outset, to be assured that the cow does not come from a tuberculous herd, or a doubtful source."

According to the researches hitherto made, goats do not appear to be susceptible of contracting the disease; and because of this, these creatures would be excellent for supplying children with milk.* In doubtful cases the milk should always be boiled.

Gerlach's memoir is dated 1869, and its importance justifies the long extract we have given; we are astonished that such a work has scarcely been noticed in France. It is true that in 1873, when Gerlach was called to

* We shall see presently that Bollinger has made some of these experiments on goats, and with successful results.

Berlin as Director of the Veterinary School, he repeated his experiments, but could not succeed in reproducing Tuberculosis by infected milk, though he afterwards discovered at the autopsy that the cow which had furnished the experimental milk was not tuberculous. This, therefore, was not a negative, but a null experiment, and affords a peremptory illustration of the difficulties surrounding the diagnosis of the malady, even in the hands of the most eminent and trustworthy practitioners.

The autopsy of the animal which has furnished the suspected milk, is, consequently, absolutely necessary in order to give experiments of a serious value.

A long time was not allowed to elapse before Gerlach's researches were examined and tested. In 1873, Klebs, Professor of Pathological Anatomy at Prague, in the first volume of his *Archiv*,* published a long memoir, in which experiments on the transmission of Tuberculosis by milk occupied the largest space. The milk he employed was furnished by a cow which was certainly phthisical, and which had been placed at his disposal by Professor Leonhard, of Berne. He experimented on nine vigorous and well-developed guinea-pigs, derived from a very healthy family, a large number of which had served for experiments of various kinds, and none had offered traces of tubercles. The memoir is divided into four parts, in which the author studies successively the following four questions :—1. Can the milk of phthisical cows transmit tubercle? 2. Is it the fluid portion of the milk which serves as a vehicle for the infectious element? 3. Does cooking destroy the noxious properties of the milk? 4. Is the milk of tuberculous cows noxious in all phases of the malady?

The five animals employed to solve the first question were healthy and strong; they drank the suspected milk *ad libitum*. Two died on the twelfth and twentieth day of the experiment. In one, the gastro-intestinal mucous membrane had a bright red tint, the mesenteric glands were abnormally tumefied, and there were caseous nodules in the spleen and liver; in the other, which was greatly emaciated, there were numerous nodules in the liver; the other organs were healthy. The other three guinea-pigs, which had wasted, and their coats looked unhealthy, were killed on the fortieth day. In one, all the organs were found normal; in the second there were caseous nodules in the liver and grey nodules in the mesenteric glands; while in the third there were cicatrices on the surface of the liver and caseous deposits in the spleen.

From these experiments Klebs draws the following conclusions :—1. Animals rapidly become unwell after the ingestion of tuberculous milk, but they may afterwards recover. 2. When death is rapid, it usually occurs as the consequence of a gastro-intestinal catarrh. 3. The alterations are first developed in the mesenteric glands, in the gland of the vena porta, and then in the liver and spleen. 4. The alterations in the liver consist of multiple tuberculous centres disseminated in the whole of its substance, or proceeding from a central deposit. Reparation appears to be made by cicatrix, and we consequently find cicatrices corresponding to the old deposits, and caseous masses corresponding to the recent centres. In the spleen the caseous nuclei persist longer than in the liver.

Klebs did not find, after the ingestion of this milk, the intestinal ulcers which had been observed in animals fed with tuberculous matter; the latter had not such a marked intestinal catarrh.

We cannot cite these experiments without criticising them. Klebs does not sufficiently describe the lesions observed at the autopsies, and he too

* *E. Klebs.* Die Künstliche Erzengung der Tuberculose. Archiv für Experimentelle Pathologie und Darmakologie. Vol. i., p. 163.

† *Loco citato*, p. 613.

readily accepts the notion that he really has to do with tubercle. He does not sufficiently prove that the cicatrices found on the surface of the liver of a rabbit result from the resorption of caseous centres; it would require more numerous and more rigorous experiments to establish so serious and extraordinary a fact as the resorption and cicatrization of tubercle, and we may ask if these were really tubercles?

Klebs filtered the coagulated milk through clay; he mixed the limpid serum with starch, and injected this clear fluid into the abdomen of three guinea-pigs. These animals died or were killed on the fiftieth day, and yellow or grey miliary granules were found in the liver, spleen, and lungs. Klebs, therefore, concludes that it is the serum which serves as the vehicle for the infective agent; but we may accuse him of having determined a traumatism which appears to him to be alone capable, in some cases at least, of causing analogous lesions in small rodents—such as the rabbit and guinea-pig.

Lastly, he gave a guinea-pig milk of the same kind, but which was previously boiled. The creature presented the same lesions as were observed after the ingestion of uncooked milk. This result surpassed all expectation, and it is somewhat calculated to give rise to doubts as to the value of the preceding experiments. Klebs appeared to be embarrassed at his success, for he says that perhaps the milk was not well boiled, though the operation was done every day by Dr. T., his assistant.

The last portion of the memoir contains a very curious and important observation, which merits reproduction somewhat in detail. A dog belonging to the director of a *Maison de Santé* in the neighbourhood of Berne, was particularly well cared for, and every day drank a large quantity of milk in the dairy of the establishment. This milk was obtained from a cow which was afterwards killed, and found to be tuberculous in a high degree. After partaking of this milk for a somewhat long period, the dog lost its appetite, became ill, and at the desire of the son of the director, who was one of Klebs' students, it was placed under observation at the Berne Veterinary Institute, where it died. It was a large-sized dog, of the St. Bernard breed. At the autopsy there was discovered pleural and pericardial effusion, an innumerable quantity of grey miliary tubercles beneath the pleura and the pericardium, some caseous nodules in the spleen and liver, and indications of acute intestinal catarrh; at the termination of the ileum there were some ulcers, the borders of which were studded with tubercular granules. There were also grey and caseous deposits in the mesenteric glands.

In order to assure himself that the dog had really contracted this Tuberculosis by partaking of the milk of the phthisical cow, Klebs had a very young goat fed with this milk. At the end of two months, the goat was killed, and only an insignificant number of doubtful deposits was found. Klebs could not explain this difference in the results; so he instituted an inquiry, and learned that through a misunderstanding they had sent him the milk of another cow, which had been coughing a little and lost condition, but was recovering and commencing to give an abundance of milk. The cow whose milk had infected the dog had been killed before the commencement of the last experiment.

The fact appears surrounded with serious guarantees, and it is, doubtless, a unique example of Tuberculosis transmitted to the dog through the digestive canal, and especially of transmission by the milk.

We have analysed, with some detail, the memoir by Klebs, inasmuch as the extracts which have been given in the majority of journals or books consist only of the conclusions arrived at by the author. An attentive perusal of the observations shows that he attributed to them an, at times, exaggerated value and significance, and, without denying their importance we

see that they are open to numerous criticisms. Klebs' conclusions have been the occasion of an excellent review by Dr. Ranse*, in which we find, together with the most judicious reserves, the expression of doubts which appear to us to be justified until more complete researches have shown their groundlessness.

Bollinger,† professor at the Zurich Veterinary School, in a kind of Conference held at the Medical Society of that canton, on May 26, 1873, passes in review the modern researches into the transmission of Tuberculosis. In chapter iii. he gives the result of personal experiments made on animals which he had caused to ingest tuberculous matter, and in the majority of instances he had obtained a positive result. With regard to the action of milk from tuberculous animals, he does not adduce any personal experiment, but contents himself with citing and summing up those of others in the following terms:—

3 pigs: 1 success, 2 cases doubtful.
3 calves: 2 successes, 1 premature accidental death.
1 lamb: 1 success.
2 dogs: 2 non-successes.
2 cats: 2 non-successes.
14 rabbits: 2 successes, 6 non-successes; the other 6 rabbits were fed on the milk boiled, and were consequently unaffected.

He expresses the opinion that the "Tuberculosis and Scrofula of pigs are assuredly mainly due to the fact that these creatures consume the milk and remains of phthisical cows in the abattoirs" (note, p. 373); but he gives no proof in support of this too confident assertion.

In 1875, in a new memoir,‡ which contains no more personal experiments, Bollinger reviews and criticises the attempts at transmission with the milk of phthisical animals up to that date; and he maintains his former opinion, though making reserves which no one could mistake the necessity for.

Fleming, the director of the Veterinary Service in England,§ has for a long time given the sanction of his authority to the experimental researches of Gerlach, Klebs and Bollinger. He does not appear to have made experiments himself, but in his first memoir‖ he relates what had been already done in this direction, and the results appear to him sufficiently conclusive to warrant him expressing himself in the following terms: "The commencement of Phthisis is so insidious in the human species, that it is difficult to say when and how it begins. Is it not to be feared that one of its causes is to be found in the use as food of the flesh, and more especially of the milk, of phthisical cows? It is particularly in the dairies of towns and cities that this Phthisis is common, and the mammary gland of cows is not unfrequently invaded .... With much more reason still should we prohibit the milk of cows affected with Tuberculosis, especially for the use of children, who chiefly live on milk,

* *Ranse.* Gazette Médicale de Paris, 1873.

† *Bollinger.* Ueber Impf- und Futterungstuberkulose. Archiv für Experimentäl Pathologie and Pharmakologie, 1873, p. 356.

‡ *Bollinger.* Gegen die grosse Gefährlichkeit des Genusses von Fleisch und Milch tuberkuloser Thiere. Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie, 1875.

§ [There is no Veterinary Service in England, and Mr. Fleming is, as a correspondent in the VETERINARY JOURNAL recently and correctly stated, "merely a regimental veterinary surgeon." We hope our foreign colleagues will note this fact, as Mr. Fleming is often alluded to by them as holding official positions other than that belonging to him in the army.—ED. *V. J.*]

‖ *G. Fleming.* The Transmissibility of Tuberculosis. The British and Foreign Medico-Chirurgical Review. October, 1874, p. 461.

and in whom the power of absorption is very active. It has been known for a long time that this milk, otherwise very poor, is capable of producing diarrhœa and debility in children; and although many of these young creatures nourished on such milk may perish from general or localized Tuberculosis, the part that fluid plays in the development of the malady may scarcely if at all be suspected."

In his *Traité de Medicine Vétérinaire et de Police Sanitaire*,† Fleming expresses himself in the same manner, and declares that the sale of this milk should not be allowed when the disease is found to exist in cows, and especially if it is in an advanced stage.

At the Hygienic Congress held in June and July, 1876, at Düsseldorf,* the fourth question of the programme was as to "the utility and regulations for the control of milk in towns." Dr. Heuzner, of Barmen, to whom was confided the task of reporting on the matter, terminates his labours in these words:—"We know that a grave suspicion exists with regard to Tuberculosis being capable of transmission to mankind, through the medium of the milk. But the interdiction of the sale of this milk is not possible, and could not receive practical sanction; inasmuch as this affection is extremely frequent, and its diagnosis at the commencement is scarcely possible, even by veterinary surgeons. I shall not dwell at length on the measures to be proposed in connection with it; a higher authority than myself (Bollinger) gives detailed information on this point. I will, therefore, content myself with remarking that, as a general rule, it is advisable to boil cow's milk, and especially that intended for the nursery," etc.

The eleventh "thesis" or proposition submitted to the Congress on this question was thus formulated: "Uncooked milk, which may be the vehicle of morbid germs, and especially of Tuberculosis, should always be boiled before being offered for human consumption.

This proposition was voted without discussion, and merely elicited the following affirmation from Bollinger, then professor at the Zurich Veterinary School: "The alimentary employment of milk warm from the cow is so common, that a person would scarcely be believed if he expressed any doubt as to its utility; and, in fact, when it is obtained from healthy animals there is no danger. But sick cows—those which have tubercules or caseous inflammation of the lungs—continue to yield milk; and this milk, when uncooked, is very dangerous. Only a short time ago, I knew of a goat, the freshly-drawn milk of which was drunk by invalids and by children, who died soon after. At the autopsy of this goat I found it tuberculous in the highest degree."

Finally, the same question was raised at the last Congress at Brussels; and Virchow, of Berlin, represented, we may admit, the scientific opinion of Germany, when he said:

"Up to what point may the contagion of Tuberculosis be due to the milk of cows affected with Phthisis (*Perlsucht*)? A series of experiments made by the director of our Veterinary School—Gerlach—seems to authorize the conclusion that the use of this milk is most injurious, and may even give rise to tuberculous diseases of the intestines, mesenteric glands, and other parts of the body. At this moment, the Minister of Agriculture has ordered a more extensive series of experiments, and these are being carried out simultaneously at the Veterinary Schools and Prussian Universities. A large number of researches have been already made, but without yielding any definitive result

† *G. Fleming.* A Manual of Veterinary Sanitary Science and Police. London, 1875. Vol. ii., p. 395.

* Die vierte Versammlung der Deutschen Vereins für offentl. Gesundheitspflege zu Düsseldorf in 1876. Deutsche Vierteljahresschrift für off. Gesundspflege, 1877.

up to the present time. Nevertheless, we may always look upon it as a fact, that a great number of animals fed in this way have been attacked with tuberculous affections. It is from this point of view that I strongly urge your attention to a question of capital importance with regard to the alimentation of man, and principally of infants."

Virchow here makes allusion to the discussions which occurred at the meeting of the Superior Veterinary Council of the German Empire, which took place in April, 1875. Several of the members—Albrecht, Lustig, Verner, &c.,—submitted to the Council, with regard to the noxiousness of tuberculous flesh and milk, propositions which elicited very divided opinions. After a stormy discussion, the members could only agree on one point, and that was with regard to the necessity for instituting a permanent Commission charged to study, by means of new experiments, this important point in public hygiene.

We need here only allude in passing, and chiefly in reference to the bibliography of the subject, to a paper read by Dr. A. N. Bell, of New York, at the Congress of Medicine and Public Hygiene, held at Chicago on June 6, 1877.*

The author gives a *résumé* of our knowledge of the subject up to the time he wrote, but he had not made any experiments. He, however, furnishes most interesting details with regard to the deplorable condition of the dairies in and around New York, and the frequency of Phthisis in them. Of eleven cows which died in these dairies, and at the autopsies of which he assisted, he found very advanced lesions of pulmonary tuberculization in ten of them. The milk obtained from these cows was sold in large tin cans, on which was painted in large letters, *Pure Milk!*

(To be continued.)

Proceedings of Veterinary Medical Societies, etc.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on Thursday evening, January 16th, 1879; Tedbar Hopkin, Esq., President, in the chair. The following gentlemen were present:—Dr. A. Gamgee Owen's College, Manchester; Professor Pritchard, London Veterinary College; Messrs. P. Taylor, Tom Taylor, John Lawson, M. A. Taylor, M. J. Roberts, E. Faulkner, Bernard Wood, J. B. Wolstenholme, A. Banks, and E. Houldsworth, of Manchester; Mr. Talbot, of London; Messrs. Polding and Bridge, of Bury; W. Dacre, W. P. Greenhalgh, and Dr. Renshaw, of Altrincham; J. B. Taylor, Ashton; E. Woolner, Todmorden; B. Marshall, Knutsford; Mr. Ferguson, of Warrington; A. Darwell, Northwich; Mr. Thomas Oldham; Messrs. Hutcheon, W. Leathes, J. Wilsby, M. Moore, G. Morgan, W. W. Townson, of Liverpool; W. Whittle, Worsley, and Sam. Locke, the Secretary. Letters of excuse were received from Professor McCall, W. A. Cartwright, T. Proctor, W. G. Schofield, M. E. Naylor, G. H. Darwell, R. Reynolds, J. Darwell, Jas. Howell, A. Lawson, Thomas Greaves, and W. Woods.

The minutes of the last meeting were read and confirmed, after which the Secretary, in the absence of Mr. Tom Taylor, nominated two gentlemen as members of this Association, viz., Finlay Dun, Esq., 2, Portland Place, London, and T. A. Dollar, Esq., 56, New Bond Street, Oxford Street, London.

* *A. N. Bell, M.D.* Tuberculosis in Milch Cows and the Contagiousness of Tuberculosis by the Digestive Organs. The *Sanitarian*, a Monthly Magazine, August, 1877.

The PRESIDENT said: I cannot allow this meeting to pass without mentioning to you that we have lost one of our members by death—Mr. Alfred Challinor has now passed away. You will all remember his kindly, genial character, his agreeable manner, and how much pleasure it gave every one who knew him to have him with us. He has gone, and we shall never see him again; and we shall only be doing our duty if a letter of condolence be sent to his widow; we have not only lost a friend, but a valuable member of the profession. Seconded by Mr. Whittle, of Worsley.

Mr. WHITTLE proposed that all liabilities of the Association be paid, and if the treasurer had not sufficient moneys in hand he was to draw from the bank account. Seconded by Mr. P. Taylor.

The PRESIDENT then introduced Dr. A. Gamgee, of Owen's College, Manchester, who had kindly promised to read a paper "On the Application of the Graphic Method to Physiological and Pathological Investigations."

He said: Mr. President and gentlemen,—You will allow me in the first place to say, that it is with much pleasure that I came here this evening—I feel very great interest in the veterinary profession; in the second place, if I had another inducement to come here with pleasure, it was the feeling that I had been asked to come by Messrs. T. Taylor and Locke, from whom I have received many acts of kindness. I trust members will excuse me if I have come to some extent unprepared with an elaborate lecture: my time is very much taken up with my duties in Owen's College, and I am very much engaged in literary work. It seemed to me, however, that the members of this Association might be interested if I merely came before them, and drew their attention to some experiments by the aid of the Graphic method. He then spoke of the important and rapid advancement which physiology had made during the present century, and he endeavoured to trace the causes of it. It could not be due to the superior acuteness and energy of modern investigation, nor altogether to the greater number of them at present devoted to the work of research. For if we looked back to the history of the 17th century, we found earnest physiologists of the highest ability who would compare very favourably with the physiologists of the present day. What recent physiologists could fairly claim was the merit of having imparted to physiological research a precision by the introduction of the Graphic method of physical investigation. Professor Gamgee proceeded to illustrate the Graphic method by experiments with the muscle and nerve of a recently killed frog. A frog's muscle was so prepared that when an electric shock was sent through its nerve, the muscle contracted and lifted a lever, the point of which made a mark upon a sheet of paper. The curve drawn by the lever-point was a permanent record of the act of contraction, and a study of it brought to light very important facts. Thus the muscle did not enter into contraction the very instant of the application of the electrical stimulus, but a brief interval elapsed, called the "latent period," between stimulation and contraction.

He further illustrated the Graphic method as applied to those parts of physiology more closely connected with medical practice, viz., to the physiology of the circulation. He described the method of accurately estimating and recording the blood pressure, which was devised by Hales, Poissenille and Ludwig, and exhibited the Kymographim of Ludwig. He also exhibited the Sphygmograph, for recording the movements of the pulse in man, and explained the nature of the curves which are obtained by means of it. He described the Cardiograph, for recording the movements of the heart against the chest-wall, and took a tracing by applying the instrument to the chest-wall of a small dog. In order to explain the meaning of the tracing, Professor Gamgee described the experiments of Marey and Chauveau with the horse's heart, in which flexible india-rubber bags were passed down

the veins and arteries into the auricle and ventricle of the heart. Each bag was provided with a tube connected with a drum supporting a lever. When the auricle or ventricle contracted, the bag in its interior was squeezed and the air in the drum connected with it was expressed. Thus the lever was raised, and by an appliance like that described in the experiment with the frog's muscle, was made to write upon a paper surface.

The PROFESSOR explained at great length these experiments, to the edification and pleasure of all present. A cordial vote of thanks was accorded him, and he very kindly promised at some future date to read another paper.

Mr. W. A. TAYLOR then proposed Mr. W. Dacre as President for the ensuing year; seconded by Mr. John Lawson, and carried unanimously.

Mr. DACRE said: In accepting the office of President of this Association, I do so with very great pleasure. For some years I have taken the deepest interest in it, and I have endeavoured to make the society one of use to us. I have always tried, with the Secretary, to get papers read which were practical, and upon which we could have a discussion which would be of lasting benefit to us. I just rise with these few words to thank you most sincerely, and I give you my word that the honour and success of this society shall not fail in my hands, if I have your support in my term of office.

Mr. PETER TAYLOR proposed for re-election, Mr. Sam. Locke, as Secretary; seconded by Mr. T. Hopkin, and carried. Mr. Peter Taylor proposed for re-election, Mr. A. Lawson, as Treasurer; seconded by Mr. W. Whittle, and carried. Mr. M. J. Roberts proposed Mr. T. Hopkin, Mr. John Lawson, and Mr. W. A. Taylor as Vice-presidents; seconded by Mr. Locke, and carried. A vote of thanks to the President closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

(*Continuation of Mr. Gerrard's paper on Parturient Apoplexy. See page* 123 *of last month's Journal.*)

I shall now direct your attention to the Ganglionic theory of the disease—a theory which, Mr. Fleming says, is "the most far-fetched of any." And in proof of his statement, he asserts that "the nerve of the intestines is a vessel nerve, and if it were to be paralysed, the vessels of the intestines would be paralysed also, which would clearly appear on dissection."

But, indeed, this is just what occurs—although not to such an extent as to be seen in every case on dissection, but in a similar proportion to the other parts paralysed.

And not only are the vessels affected in their smaller branches, but the intestinal muscles also, which are principally under the control of this system. If they are not so, why this distressing tympanitis and antiperistalsis of the œsophagus, which often converts a hopeful case into a fatal one? "None of the symptoms of this disease," he says, "favour the belief that the sympathetic system is affected."

I most thoroughly believe that all the symptoms of this affection point most conclusively to the primary disturbance occurring in this system of nerves. Not only does this system preside over and control the vascular supply of the intestines, but it is the vessel nerve of the whole body. It governs all those motions which are purely involuntary, and its centres are believed to be the seats of those faculties we call "emotional" and "instinctive;" from it the heart receives its motor impulses—the vagus being a moderating nerve of that organ.

Branches of nerves from the ganglionic centres accompany every artery

throughout the body to its termination, and without the direction of the will regulate the contraction and dilatation of the blood-vessels to their most refined distribution. If this supply be cut off by division or impairment of function of the ganglionic nerve of a part, the vessels are paralysed, and become dilated with the flowing blood.

When certain physical impressions are made upon the organic nerves, the disturbance of their supply is indicated by distant phenomena; the blush which mantles and the pallor which overspreads the check under the influence of mental emotion or shock, are phenomena of this order. The effect of mental emotion on digestion and biliary and lacteal secretion are well known. And, as the late Professor Barlow says, "Why should not the powerful excitement of parturition, in some similar way, affect the cow, producing, among the other derangements, arrestment of lacteal secretion—an event by whatsoever means effected, directly or indirectly—eminently mischievous?"

The functional importance of this system of nerves is proved by the fact, that in the very lowest class of animals, where preservation and propagation of their own species is their sole function, it is the only system existing, and it is only as we rise in the scale that this primitive nervous chain becomes connected with the fibres of the more highly developed nervous system. But even in the highest development—man—the primitive chain remains; and although connected by their fibres in different parts, they are still distinct, both anatomicallyand functionally.

A system so universal and so important to all the functions of organic life cannot but be implicated in such a disease as this, when we reflect that the complex fluid called "milk," at once the most typical and most universal food elaborated from the storehouse of nature: and, further, when we reflect that in order to produce this fluid a large development of this system is necessary; and it has been proved that during pregnancy, not nerves only, but considerable ganglia, previously not perceived to exist, are apparent in the vicinity of the uterus and mammary glands.

If, therefore, the sympathetic system be interfered with, as it undoubtedly is, other vessels than those of the intestines would be paralysed, and other and very important functions would be suspended or interfered with. And, indeed, this is just what we find in this disease—the interference with or suspension of nearly all the important functions of the body, especially secretion, excretion, volition and motion.

It is evident that if all these functions are interfered with, the function of some part of the nervous system is either wholly or partially suspended—in short, we have what is known as paralysis.

But, indeed, Mr. Fleming admits "that in the course of the disease there is paralysis of the vagus;" but the vagus is not of the sympathetic, and the question arises, how does this paralysis occur?

This, I think, is the principal difference between us; but it is a difference that lies at the root of the matter.

Is the paralysis centric—arising from the brain lesions of anæmia or extravasation? or is it reflex—arising from some "peripheric excitation"?

I have already indicated my opinion against its being centric or commencing in the brain from the sudden rush of blood thereto, either by anæmia or extravasation. I shall now briefly indicate my reasons for thinking that it is eccentric, or originating in the ganglionic system.

The first proof that it is of an eccentric nature is the fact that the paralysis is of a progressive type.

We never find any cases of this disease corresponding to an apoplectic seizure of the human being. No; the first stage of this disease is that of excitement—the bloodshot eye, the excited look, the throbbing heart, and the heightened temperature occurring at or soon after the act of parturition

give evidence of dilatation of blood-vessels following upon the reduction of nervous control. Now, what causes this dilatation of blood-vessels? Deficiency of nervous influence, induced by the excitement of the act of parturition, and the recoil of the ganglionic system from its attempts to rid the system of its superabundant nitrogenous elements in the shape of milk. As a rule, you will find, at least I have always found, that the secretion of milk is very abundant at first, or in the first stage of vascular excitement. What more common to be shown or told of the great bucketful of "beastings" they got from a cow as soon as she was calved; and of the great surprise they experienced when some six or more hours after they could not get a drop?

But by this time the eye begins to grow dim, the heart to flag, the temperature to fall, the cow commences to lift her hind-legs spasmodically, and perhaps staggers when made to move, showing that the function of the spinal cord is interfered with. By-and-by, the co-ordination of muscular movement is seriously impaired, and she staggers and falls, perhaps to rise no more, but not always.

This stage occurs in about from twelve to twenty hours, if the cow is of an excitable temperament, and a very heavy milker in high condition. When newly fallen, if we prick with a pin or pen-knife in the posterior extremities, you will find sensation gone; but as you advance up the spine you will be able to make her feel, and perhaps start up, but only to tumble down again. Now the breathing begins to be excited and short, depending a good deal on the condition of the stomach, the eyes become duller, the temperature of the body low, and sometimes great uneasiness is manifested, and attempts to rise are frequent and ineffectual.

Now in all this we have only a gradual and progressive interference with function; apoplexy, in the ordinary sense of the term, as yet we have not. Gradually, however, the outworks are sapped and surrendered, and at last perhaps the citadel is reached and fearful havoc made in the garrison, as indicated by the pendulous head persistently turned to one side or unconsciously dashed about, the amaurotic eye suffused with tears which frequently run down the cheeks, stertorous breathing, general insensibility to all stimuli, and the complete loss of all voluntary muscular power.

In short, the carcase lies a mere log—dead in all the organs except the one having its motor supply from the nervous system of organic life, "the heart;" this is always the last to yield.

This is apoplexy, as I have observed it; and it is no fancy picture or fictitious case I have sketched. Such cases are of almost weekly occurrence with me, and at all seasons; for I do not believe that temperature has anything at all to do in its production. Indeed, I have as many in the months of December and January as in June or July.

All cases, however, do not go on to apoplexy; but the apoplectic stage is generally reached before we are called in, and indeed before they are observed to be ailing; unless the owner may have had frequent losses, causing him thereby to watch them closer.

But in all cases that I have watched from the commencement, this has been the course of the disease, which convinces me that we have no sudden case of collapse commencing at the brain, induced by aortic pressure or anatomical formation, either anæmic or congestive, but that it is of a progressive type, commencing at the periphery, and gradually reaching the centre.

We have seen that all the minute blood-vessels at the extremities of the circulation are under the control of the ganglionic system of nerves. We have seen, also, that they are the principal nerves presiding over nutrition and secretion, notably so the secretion of milk. Now it is a well-known law in the animal economy, that whenever there is a great excitement in the

system, it is succeeded by a corresponding depression. Upon this fact in physiology hangs, I think, the explanation of this theory of the disease.

The first stage of the malady is characterised by excitement of the udder. There is a determination of blood to it by what is known as sympathetic action. However we may theorize and speculate on aortic pressure, undoubtedly the great volume of blood finds its way to the udder, even before the act of parturition commences, and always before that act is concluded. Now this is most noticeable in heavy milkers, and it is in them only that we have the disease, and where the ganglionic system is largely developed.

The excitement of the parturient act is followed by a copious secretion of milk; but in consequence of this very copiousness of secretion, and the peculiar susceptibility of the ganglionic system to take on morbid impressions, there is a reaction or recoil in it, and the function of the ganglia are suspended.

The effect of this disturbance of ganglionic function is to cause dilatation of the peripheral vessels, especially the vessels of the udder. The blood now rushes into the uncontrolled vessels, giving rise to the stage of engorgement. With this disturbance of power in the vessels of the udder, more disturbance is set up in the other organs through reflex action; excitement of the whole system is visible, and soon the diminished action of the spinal cord is apparent in the deficient power of co-ordination of muscular movement in the posterior extremities, and by the influence the cord is known to exert upon the heart through the sympathetic system.

The peculiar action of the cord in increasing the force and number of the pulsations of the heart, is through what is known as the *nerve of Cyon*, by means of which the heart produces a reflex action, which causes the organs of the peripheral circulation to dilate, and consequently enables it to diminish the number and energy of its efforts. And this, we find, is what occurs at this stage of the disease.

This, I believe, is the explanation of the brain symptoms: effusion arising from the paralysing reflex action of the *nerve of Cyon*, the depressing nerve of the circulation, producing depletion of the heart, and consequently diminution in the pressure of the blood in general, evidenced by the lowered temperature which now is present, and feeble beat of the central organ of the circulation, with coma, and most frequently death when this stage is reached.

In short, we have, first, excitement of the gland through the sympathetic action, ending in increased secretion of milk—1st stage. This is almost suddenly succeeded by engorgement of the gland, through a reflex action of the ganglionic system, allowing of the dilatation of the blood-vessels, assisted by the increased amount of blood thrown back upon the system by the rapidly involving uterus, and consequently an arrest of secretion—2nd stage. The functions of the cord are interfered with through the reflex action of the hypogastric or lumbar plexus, hence the loss of co-ordination of muscular action in the posterior extremities—3rd stage. This is succeeded by the peculiar action of the *nerve of Cyon* upon the peripheral circulation, excited through the heart; effusion into or on the soft brain tissue occurs—4th stage. This may be succeeded by permanent loss of brain power and collapse, or resolution if the excitement has not been too strong, or the effusion too extensive.

Such, in brief, are my conclusions as to the nature and cause of this disease. They are founded on practical observation, and sanctioned by the known laws of physiology and pathology. Instead of being "far fetched," as Mr. Fleming maintains this ganglionic theory to be, it is the only one that, in my humble opinion, most directly and simply meets the requirements and accounts for the phenomena of this complicated condition of the bovine female

In these days of germs and bacteria, we are too apt to look beyond the system for some particular entity as the cause of disease that was created and been living on in the by-past eternity, and that will continue to live on in the eternity to come; and to forget that, after all, what we call disease is a natural, although an abnormal, condition of the body; that, in fact, pathology is a department of physiology, and the phenomena of disease result from the action of normal structures and forces of the body, only modified by morbid conditions.

In conclusion, gentlemen, I have to thank you for your kind and unwearied attention, for wearied some of you, no doubt, must have been listening to this dry, and it may be to some of you, somewhat unpalatable harangue. If I have wearied your patience, I crave your indulgence, and hope you will have your remedy in the host of objections you will be able to raise to some of the ideas advanced, and the criticisms submitted. So that a good and profitable discussion may be evolved, truth may be attained, science advanced, and you and I may find our reward in the consciousness of having done, or tried to do, our duty.

Mr. P. TAYLOR complimented Mr. Gerrard on the ability he had displayed in the production of such an excellent paper. The subject was a very interesting and important one to every veterinary surgeon, and their thanks were due to him for the very scientific and practical manner in which he had treated it. The paper was one which it would have been an honour to any professor to have brought before them. He concurred, generally, with the views propounded by the essayist, and hoped that they would have an opportunity of reading them in the journals, where by a careful study of the theories he had advanced, they would be able to derive more benefit than it was possible to do by merely hearing it read once.

He then gave a brief summary of the symptoms of the disease, and the general course of treatment pursued by himself. He had seen much of it, and he had treated it in every manner and way; but he could not say that he had been much more successful with any one mode of treatment than with another.

In the first stage, he gave purgatives, combined with stimulants and nerve tonics. He never gave any medicine in the comatose state, as he considered it dangerous to do so. He applied, externally, stimulants, hot cloths, and the smoothing-iron to the loins and abdomen, kept the cow on her sternum, fixed her horns to the stall, drew off the milk frequently, and emptied the bladder and rectum at short intervals. But when you have done your best, he said, you will often be disgusted with your want of success in treating this disease. Treatment, to be successful and satisfactory, must be preventive. He was in hopes that the essayist might have discovered a cure for it.

Mr. STORRAR said that his own opinion of the pathology of this disease was thoroughly at one with the theory enunciated by the essayist, and agreed with Mr. Taylor that our principal aim, where this disease was prevalent, should be directed towards its prevention. In his own practice he gave stimulants and purgatives; of the former, he preferred ammonia to alcohol, as he considered that the sedative reaction of alcohol was detrimental in this disease. He generally gave his purgative medicine in a solid form in this disease—first, because it was safer to administer; and, second, because it went directly into the rumen, where it was most wanted.

Mr. MOORE, SEN., said that he had not given purgative medicine either as a preventive or cure in this disease for 20 years. The bowels are only paralysed, and if you restore the nervous system, the muscles will soon act. His practice was to give aconitum and belladonna alternately, in the first or excited stage. If tympanitic, he gave ammonium causticum, and in the

comatose stage, he gave arsenicum ; and when the animal began to recover, he administered nux-vomica.

He had tried galvanism, and found that by applying it across the loins he could disperse the gas in the stomach ; but he had experienced difficulty in applying it effectually in this disease.

Mr. STEVENSON said he had also tried galvanism in the treatment of this disease, but had failed to do so effectively, or with even any results in the comatose stage.

Mr. BARNES said that he agreed with the essayist as to the pathology of the disease. He had seen a great many cases of it, and had been fairly successful in the treatment of it, his recoveries being about 50 per cent. His practice was to bleed in the first stage, administer stimulants, combined with slight aperients, and apply stimulating applications to the spine, and a severe blister to the pole. He attended to the animal generally, as spoken to by the previous speakers. He had, however, often experienced great difficulty in getting the cow up after the disease had subsided, and related some cases where the muscles of the hind-quarters were almost a mass of degenerated tissue.

Mr. ELAM thanked the essayist for the time and trouble he had bestowed upon his paper, and hoped that he would agree to allow it to be published in the journals. In his own practice, for this disease he had formerly tried purgatives ; but he now mainly depended on the administration of stimulants, principally ammon. carb. The bowels, he thought, acted better by the administration of this medicine than by any other he had tried. He attended to the animal generally, as referred to by the other speakers, only he applied ice or cold cloths to the pole. He had also experienced the same trouble of getting them up after the acute stage was passed, as Mr. Barnes had referred to. As a preventive, he kept them short of food, and gave them ammon. carb. both before and after calving.

Mr. WOODS said that from his own observation and experience of this disease, he was inclined to think that there were some local causes, such as climate, &c., which had considerable influence in producing the disease, as there were some districts in which it was very prevalent, and others quite contiguous where it was scarcely seen. He had for a number of years devoted his attention principally to its prevention, and, he believed, with good results. He recommended ammon. carb. to be given both before and immediately after parturition.

Mr. WELSBY concurred in general with the views of the essayist, but he could hardly reconcile the practice of administering ammonia previous to parturition as a preventive recommended by the previous speakers, with the opinion that the disease never follows difficult cases of parturition. He preferred keeping them on low diet, moderate exercise, and the administration of mild aperients. If the cow has a morbid appetite, bed her with sawdust, or put a muzzle on.

Mr. MORGAN said he had not seen very much of this disease, but he agreed generally with the view taken by the essayist, and considered that improved breeding and artificial rearing were the principal causes of this disease, as among animals in the wild state it did not occur. They were much indebted to Mr. Gerrard for his excellent paper, and hoped that he would accede to the request of the members, and allow it to be printed.

Mr. DACRE, like the other members, expressed the pleasure with which he had listened to Mr. Gerrard's paper. He then criticised Mr. Moore's treatment, and said that he had come to the conclusion, from his own experience, that the less medicine you administer in this disease the better. He then related a very aggravated case, in which he administered no medicine, attended carefully to the animal, turned her over, relieved the tympany, applied hot cloths, &c., and the animal recovered very satisfactorily.

Mr. REYNOLDS spoke in terms of appreciation of the paper, and agreed in the main with the opinions propounded in it. He would like to have the essayist's opinion as to whether allowing the calf to suck was beneficial or otherwise, as its presence with some, and absence with others, caused great excitement in the cow.

Mr. TOWNSON, after complimenting the essayist on the production of such an excellent paper, said that in his own practice he bled in the first stage; but if the cow was down, he did not bleed, but administered a mild purgative, combined with stimulants, such as brandy, whisky, or the salts of ammonia, and attended to the animal otherwise, as referred to by other speakers.

Mr. WATSON and the SECRETARY also complimented the essayist on the ability he had displayed in bringing before them such a clear, philosophic, and scientific paper on such an important subject, and concurred with the wish expressed by the other members that he would allow it to be published, in order that they might have a better opportunity of examining it.

The PRESIDENT referred to the breeds of cattle most liable to it; the pure breeds, with the exception of those principally bred for dairy purposes, being most exempt. In reference to the age at which the cow was most liable to it, his own experience was that it occurred about the fourth or fifth calf, while some other members considered that the third calf was the most likely time. He concluded by thanking Mr. Gerrard for his very able paper, and asked him in his reply to favour them with his opinions as to the treatment, as that had occupied a prominent part of the discussion.

Mr. GERRARD said, that although he had spoken to them at great length, he had said nothing as to the treatment of the disease. This they would readily understand, as the therapeutics of the subject did not fall within the scope of his paper. But as some of the members appeared to be anxious to know his experience on that point, he could not do better, perhaps, than indicate his procedure in a case.

In the first stage of the disease, or before the cow is down, he said, I administer a stimulant—brandy, half a pint, ammon. carb. 2 oz.; water half a pint, repeated every hour or even oftener, according to the nature of the case—I find the best. Rub a strong ammoniacal liniment along the spine and across the loins, cover with a rug, blanket, or sheepskin—if procurable. A good smart purgative administered at this stage does more good than when the animal is down and unable to swallow, when it frequently does harm, however administered. It is of consequence to keep as quiet as possible at this stage and avoid everything tending to excite the animal, such as the removal of the calf, or allowing it to remain, if its removal leads to excitement. I may here state a practical fact that is regarded by many as an exciting cause of the disease, but which I find is not so. The removal of the calf I find to be no exciting cause, although I was taught so, and at one time believed it. It is the invariable practice in my district of Lincolnshire to allow the calf to remain with the cow for a few days, and I find as many cases of the disease, indeed, more in proportion to the number of the cows kept, than in the North of Scotland, where they almost invariably remove the calf as soon as dropped.

I have frequently bled in the first stage of the disease, but with no good result—rather the contrary; as it tends to excite them too much, frequently producing convulsions and the conditions described by Mr. Fleming as resulting from anæmia.

In the comatose stage I have found bleeding frequently remove or alleviate the brain symptoms, but only temporarily, so that I regard bleeding as of little consequence as a curative agent, the nervous system being too much implicated to be benefited by such a powerful depletant. Bleeding, to be useful,

must be had recourse to earlier, even before calving, although it is seldom done ; but I have no doubt from the nature of the affection it would be a preventive if we could always determine what cows were to become affected.

In the second stage, where the animal is down, but not comatose, I proceed on the same principles of moderate stimulations and cathartics, with embrocations along the spine. If the temperature is low, I frequently use a hot smoothing iron along the sides of the spine and across the loins with good effect, by preventing it getting lower or reviving it. Empty the rectum and bladder, draw the teats frequently, and endeavour to make the animal as comfortable as possible, by placing and keeping her in a natural position.

At this stage of the disease, I have frequently had good effects from the application of galvanism, the two poles of a battery being placed one on each side of the spine in the lumbar region, and well pressed down by an assistant with a folded sack or some such non-conductor over them. In all stages of the disease, unless the first, when the cow is still standing, I find galvanism beneficial; in it, the excitement is too great, and it invariably does harm.

If an animal survives twenty-four hours after being first observed, and no marked comatose symptoms are present, my experience is that recovery may be safely predicted if no complication arise, or previous disease of any organ, such as the lungs or liver, exist.

If it is an acute attack and comatose symptoms suddenly show themselves, and the animal is in very high condition, I consign her to the butcher ; for my experience is that they very seldom recover, whatever treatment you adopt. I consider it more in the interest of science to admit your inability to cope with an incurable condition to cure than to exhibit your ignorance and incompetence by attempting, it.

If the comatose symptoms are not rapidly developed, and the animal lives over twenty-four hours or so, and if inability to swallow be present, I find good results from giving medicines in a solid form, in the shape of bolus, which is easily done, and runs no risk of inducing Pneumonia or Bronchitis, as so frequently occurs, however careful we are in administering medicines in the liquid state. Twenty to thirty croton seeds, ammon. carb. 2 drams., ginger 2 drams, with any convenient excipient, form a suitable and appropriate remedy.

As a tonic after the comatose stage has passed, I have good success from tinct. nucis vomicæ, combined with aromatic spirits of ammonia and tinct. capsici. Any complication arising, such as tympanitis, which frequently militates against a cure, must be treated according to recognised practice, by puncturing the rumen, &c., but the ammon. carb. ball has a very good effect in preventing such. It would be useless to weary you with more detail.

Mr. Gerrard then showed the members a brain that he had taken from a cow which had died of Parturient Apoplexy, which manifested a considerable degree of congestion on the anterior lobes principally ; and at the close of the meeting they had an opportunity of seeing him dissect it, when, notwithstanding that it had been some little time in spirit, it showed a distinct congestive appearance on the surface of the brain substance, as well as several small spots of extravasated blood. He then said: Now, gentlemen, I expected and was prepared for a severe criticism of my opinions as to the pathology of this disease, but as the members have dwelt principally upon the therapeutics of the subject, I can only say that, considering the generous manner in which you have received my present attempt to deal with the pathology of the malady, if at some future time a gap were to occur in the contributions to your society, and you were to honour me with the privilege, I have no objection to come back and deal with the therapeutical part

of the subject, which I could then do in a more complete form than would be admissible at present.

The following gentlemen were then elected officers of the Society for the ensuing year, viz. :—Mr. J. H. Welsby, President; Messrs. W. Whittle, H. Barnes, and J. W. T. Moore, Vice-Presidents; Mr. C. W. Elam, Treasurer; and D. Hutcheon, Secretary.

Votes of thanks to the retiring President and to Mr. Gerrard were carried by acclamation, terminating a very interesting and instructive meeting.

D. HUTCHEON, *Hon. Sec.*

THE MONTREAL VETERINARY ASSOCIATION.

THIS Association held its regular semi-monthly meeting on December 18th, in the lecture hall of the College, Union Avenue. Professor McEachran in the chair. After the usual business routine, Mr. P. H. Cummings, of Quebec, was called upon to read his communication on a case of *Navicular Disease* treated successfully by him during the past summer. The anatomy of the parts involved, the numerous theories advanced as the cause of the disease, and the modes of treatment were explicitly and fully explained. The *frog seton* (the treatment used in the case) was strongly advocated by the speaker, and its mode of introduction plainly demonstrated. This reading led to considerable debate and critical interrogation, which gave Mr. Cummings the opportunity of enlarging still more on the subject, with which, from careful investigation, and practical knowledge, he is thoroughly conversant. Next in order was a paper by Dr. James Bell, of the Montreal General Hospital, and lecturer on *Materia Medica* in the Veterinary College, on Dr. Lister's *Antiseptic Treatment.* The paper was prepared in the most thorough and scientific manner. The system was minutely explained as given by the inventor, which was followed by a number of valuable remarks as to its use in certain cases, such as complicated fractures, amputations, large wounds, &c., based upon personal experience. Some estimate of the pain and suffering prevented by this treatment can be arrived at, when it is generally admitted that operations which, under ordinary treatment, would take weeks or even months to heal, would, under Dr. Lister's *Antiseptic Application*, be thoroughly healed in from one to two weeks—not unfrequently large and dangerous wounds are restored to perfect soundness in ten days or even less. Another noteworthy consideration in favour of this treatment is the almost complete absence of troublesome and dangerous after results, such as Septicæmia, Erysipelas, &c., diseases which are not an uncommon sequence under the ordinary method. Dr. Bell closed by referring to its applicability in veterinary practice, which was supplemented by some useful and practical suggestions from the chairman, who was of the opinion that this new and humane invention would, in the hands of the scientific veterinarian, be of incalculable benefit to the profession. A prolonged discussion ensued, which was entered into by most of the members present, at the termination of which the lecturer exhibited the apparatus used by Dr. Lister, and also the prepared gauze dressing, &c., made by him for the purpose. At the next meeting, to be held on the second Thursday in January, Mr. Lemay will read a paper on "Stable Management."

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council Meeting, on February 5, the Hon. W. Egerton, M.P., reported that he had been elected Chairman of the Committee for the year 1879. A letter had been received from the Secretary of the Royal Veterinary College, stating that the governors complied with the wishes of the Council

of the Royal Agricultural Society to obtain the services of the inspector of the College for the members of the Society during the present year, and asking whether the list of charges would be as laid down in an accompanying scale; and also what would be the rate of payment for special reports or investigations of outbreaks of disease. The Committee recommended that the proposal of the governors be accepted, and that the charges to members in future be as follows:—

	s.	*d.*
Keep of an ox per week	10	6
„ a sheep „	3	6
„ a pig „	3	6
Personal consultation	10	6
Consultation by letter	10	6
Post-mortem examination and report thereon	21	0
Visits in cases of serious or extensive outbreaks of disease, exclusive of personal and travelling expenses, per diem	42	0

Special reports or investigations to be paid for according to the nature and importance of the investigation, or according to the scale of charges paid for an Article in the JOURNAL. With regard to chemical analysis, the payment should be made according to the scale applicable to subscribers to the College. Since the last meeting of the Committee, Professor Axe had reported on an outbreak of scab in sheep and a case of lead poisoning in cattle; and the Committee recommended that the report in the latter case be published in the agricultural newspapers, viz.:—

Royal Veterinary College, Jan. 13, 1879.

DEAR SIR,—I beg to inform you that I visited Hobb Hill Farm on the 7th inst., and inquired into the circumstances attending an outbreak of disease in a herd of beasts, the property of Mr. Handley.

I have to report that the disease first appeared on January 1, and at the time of my visit six cows had died, and several others were seriously ill. Messrs. Flower, of Derby, and Poyser, of Melbourne, veterinary surgeons, had been consulted by Mr. Handley, and they were of opinion that the malady was due to poisoning by sulphuric and prussic acids.

At the time of the outbreak of the disorder the cows were receiving as food grains, Indian meal, and hay. The grains were stale, having been collected in the summer. With a view to preserving them, they were covered over with sods and earth which had been removed from the side of the road adjoining Mr. Handley's farm. I had an opportunity of examining a portion of the mixture of grains and meal on which the cattle were last fed previously to the outbreak, and in it was found a considerable quantity of lead-slag in a state of fine division. Similar matter was also found in large quantities in the stomachs of two cows of which I made a *post-mortem* inspection. As the roads in lead-mining districts are frequently repaired with lead-slag, the sods and earth referred to may be regarded with suspicion of containing the poison. The symptoms exhibited by the animals during life were strikingly illustrative of lead poisoning, and the *post mortem* lesions likewise point to the same conclusion. Regarding the disease as the result of lead poisoning, I consulted with Mr. Poyser, who was in attendance, and suggested the course of treatment to be pursued. This morning I have received a letter from Mr. Wood, of Wirksworth Hill, informing me that no more deaths have occurred. The stomachs of one of the cows are now being analysed, and the result will no doubt be made known to you by Professor Tuson when the analysis is completed.—I am, yours faithfully,

H. M. Jenkins, Esq. J. WORTLEY AXE, Professor.

Chemical Laboratory, Royal Veterinary College,
Camden Town, N.W., February 3, 1879.

SIR,—In reference to the suspected case of poisoning, sent through you, from Mr. J. B. Wood, to this Institution for investigation, I beg to report as follows :—

On the 12th ult., Professor Axe handed to me a basket, in which I found six parcels and part of a linseed cake. The parcels were respectively labelled—

"A. Sample of Indian meal and grains as used before disease broke out, but washed."

"B. Sample of earth similar to that used for covering the grains ; residue of quarter bushel, after repeated washing."

"C. Sample of Indian meal after repeated washing, that sent being residue of about half bushel."

"D. Sample of grains after repeated washing of a bucketful."

"E. Sample of the heap of Indian meal and grains used just before disease appeared, after washing ; residue of one cow's feed—*i.e.*, about a bucketful."

"F. Sample of earth got from same place as that used for covering grains, but washed."

On the 21st ult., Professor Simonds handed to me four stomachs of a cow.

The materials contained in each of the parcels and the cows' stomachs were separately submitted to chemical analysis, when I detected a considerable quantity of lead in the parcel marked "E," but this metal could not be discovered in either of the other parcels.

Large quantities of lead were likewise found by analysis in the cows' stomachs ; in fact, fragments of the supposed poison were picked out of the cells of the reticulum (second stomach). When these fragments, as well as others of similar appearance detected in parcel "E," were analysed, they were in both instances found to consist of galena, which is chemically a native sulphide of lead.

The sample of linseed cake was not examined, as I thought that in all probability the results of its analysis would not throw any light on the cause of the death of Mr. Wood's animals.—I am, sir, your obedient servant,

RICHARD V. TUSON, F.I.C., F.C.S.,
Professor of Chemistry and Toxicology in
the Royal Veterinary College.

To the Secretary Royal Agricultural Society,
Hanover Square.

The report of the examiners appointed to test the qualifications of the students competing for the Society's veterinary medals and prizes had been received, and the Committee recommended that the Council of the Royal College of Veterinary Surgeons be asked to draw up a modified scheme for the consideration of the Council of the Society at their next meeting.

The Committee also recommended that a communication be made from this Council to the Privy Council, urging upon the Government the importance of immediately placing the United States of America under the provisions of the Act which provides for the slaughter of foreign animals at the place of landing. This report was adopted.

The Hon. W. EGERTON added, with reference to the last paragraph of the Committee's report, that the evidence before the public had led the Committee to recommend that the United States should be placed under the provisions of the Act of 1878 relating to slaughter at the port of landing. It was perfectly true that in the vessel which brought over the animals suffering from Pleuro-pneumonia there were Canadian animals, but it was believed that in

future Canadian animals would be shipped from ports within the Dominion, probably Halifax, instead of Portland ; and the Committee had therefore not included Canada in their recommendation.

Mr. DENT said that he would not formally move the rejection of the last clause of the report, but would merely express his regret that it was thought advisable to make the proposed representation to the Privy Council. He foresaw that if those recomendations were carried out it must end in all animals being slaughtered at the port of debarkation. But at the same time he would like to register his protest, and threw out one word of warning, if trade revived, as he hoped and believed it would, the restrictions on the trade in meat would be so great that he was afraid it would almost be at a famine price, and that an outcry would be raised throughout the country, which would result in the Act being repealed. At this moment there was a decided revival of trade in America, and that revival was mainly owing to two successful seasons in agriculture. A revival of trade in America always signalised a similar revival of trade in England, and he thought they should very carefully guard against doing anything which would tend to check it. The agriculturist of America were very large consumers of manufactured articles, and the same remark applied to English agriculturists. He did not see how it was possible to draw any line between the United States and Canada, and he should have been glad if the Veterinary Committee had seen it right to leave the matter entirely in the hands of the Privy Council. His own belief was that the restrictions imposed prior to the passing of the Animals Diseases Act were quite sufficient to keep diseases out of the country. We were no more free of disease than we were before the new regulations came in force.

Mr. JACOB WILSON sincerely hoped that the report presented by the Veterinary Committee would be adopted in its entirety, especially as it included their recommendatioa with reference to the outbreak of diseases at Liverpool. He could assure the Council that there was a very strong feeling of alarm throughout the country at this outbreak ; and considering that the farmers of England were now subjected to very great restrictions, he thought it was the duty of the Council as representing the argricultural interest of the country, to express their views to the Privy Council. It was quite possible that the Privy Council had already initiated the action suggested by the Committee, and in that case it would be gratifying to the Lord President to know that he was backed by the agricultural opinion of the country. If, on the other hand, the Privy Council were in a state of doubt as to what ought to be done under the circumstances, the opinion of the Royal Agricultural Society might be of value in aiding them to come to a decision. Therefore on whatever grounds the matter was put, it was desirable that some expression of opinion should be made. It had been no secret whatever that Pleuro-pneumonia had existed to considerable extent throughout the United States of America for some time past, and the other countries of Europe were anxiously watching the action which the Government of this country would take in reference to this outbreak. As to the general trade of the country, he did not for a moment believe that it would be interfered with by the proposal of the Committee. The dead meat trade was extending every day, and the live stock trade had also been considerably developed lately. The Veterinary Committee did not propose to interfere with either trade, but suggested that the live animals imported should be slaughtered at the place of landing. He thought it an exceedingly fortunate thing that this outbreak of disease had taken place before further arrangements had been made for the greater extension of the traffic in American live cattle. He hoped that the Council would speak with no measured voice, and would show the farmers of the country that their interest was being upheld by the Royal Agricultural Society of England.

Mr. BOWEN JONES thought it would be interesting to have a little additional information in reference to the outbreak of disease at Liverpool, and, with the permission of the Council, he should like to ask the Chairman of the Veterinary Committee if a detailed account of the outbreak had been placed before them. For instance, he would like to ask if the animals were moved from the quay by order of the Privy Council, and also whether the same quay was used for the reception and landing of other animals, and also of the Irish stock coming to England, as, if so, it appeared to him that a large amount of danger would be thereby incurred.

The HON. W. EGERTON replied that the animals suffering from Pleuro-pneumonia came in a mixed cargo of American and Canadian animals, and although the latter were recognised by the Canadian dealers themselves, the inspector said he could not distinguish them from the American cattle. With regard to the slaughter of animals, there was no provision at Liverpool or Birkenhead for their slaughter on the quay. At present all the foreign animals were landed together, as he understood, but the Irish cattle were received at a different landing-place.

Mr. JACOB WILSON added, that the animals actually diseased were not moved, but killed on the spot; but the animals in contact were moved and killed in slaughter houses in the town.

Mr. BOWEN JONES looked upon the outbreak as a matter of the greatest importance to agriculturists throughout England. With regard to the recommendation made by the Committee, as far as it went, he entirely sympathised with them, but it was a question in his mind whether the Committee had gone far enough, for he thought it would only have been rational if they had included the Dominion of Canada as well as the United States. He added that they must continually urge on the Privy Council to carry out in its true spirit, and to the letter, the Act passed last session. This Act he regarded as a compromise to please the masses in the large towns, who were uneducated upon the subject.

Mr. T. AVELING was adverse to the proposed communication being sent to the Privy Council. He thought that, on the one hand, the Council had done enough in the matter of legislation, while, on the other, they were doing more than enough to encourage the importation of foreign animals.

Colonel KINGSCOTE most thoroughly agreed with the recommendation of the Veterinary Committee, and would be extremely sorry if the Council did not adopt it. The present outbreak of disease was a danger that had been anticipated for some time. There was an honorary member of the Society in the room—Mr. Fleming—who had studied the question very deeply. Mr. Fleming pointed out to him some months ago that this disease of Pleuro-pneumonia had been for years raging in America, and the great danger we should sustain in allowing animals to come into this country without being slaughtered at the port of landing. The Act of Parliament declared that where there is disease in any country, that country should be scheduled, and as they were naturally alarmed by this outbreak of Pleuro-pneumonia, they asked the Government to prevent, not American meat, but this disease coming in. The report was then adopted.

HIGHLAND AND AGRICULTURAL SOCIETY.

THE monthly meeting of the Directors of this Society was held on February 5th, when a copy of the agreement between the Society and the Royal College of Veterinary Surgeons, referred to at the general meeting on the 15th January, was read.

The principal items in the agreement are that—"Any holder of a certificate granted by the Society since 1848 shall, on application, and on payment

of fees as specified, be admitted as a member of the college, and shall not be required to submit to any further examination previous to such admission. Every holder of a certificate granted by the Society, as aforesaid, from 1848 to 1872, shall be admitted as a member of the college on payment of a registration fee of one guinea. All candidates for such admission to whom such certificates as aforesaid shall have been granted since the year 1872, shall in like manner be entitled to admission on payment of fees according to the following scale or table, that is to say :—

Every holder of a certificate granted during the year 1873, on payment of 2 gs.; during 1874, 3 gs.; during 1875, 4 gs.; during 1876, 5 gs.; during 1877, 6 gs.; during 1878, 7 gs.

All students now enrolled at any of the teaching schools connected with the Society, to whom such certificates shall hereafter be granted, shall be admitted and enrolled as members of the college on payment of a fee of 7 gs. These rules are signed by A. Gillon, A. Murray, T. Mylne, directors; and F. N. Menzies, secretary (under the seal of the Highland and Agricultural Society of Scotland); also by William Henry Coates, secretary (under seal of the Royal College of Veterinary Surgeons).

PRESENTATION OF A TESTIMONIAL TO PROFESSOR WILLIAM PRITCHARD, M.R.C.V.S.

THIS event took place at the "Theatre" of the Royal Veterinary College, on the 5th inst. The present consisted of a massive silver cup and an address bearing the names of subscribers. The amount contributed was forty guineas. A senior student (Mr. Edgar) presented the gift in the following terms :—

"Professor Pritchard,—We have requested the favour of your presence in this theatre for a few minutes this morning, that we may offer to you our congratulations upon the recent event of your marriage, at the same time embracing the opportunity of expressing our sense of esteem and gratitude for the corteous and zealous consideration ever entertained by you for our academical advancement and professional efficiency.

"We are fully sensible of our advantage in possessing a teacher true to his science—true to his honourable position—at the same time anxious to impress the 'student mind' with a feeling of friendship and personal regard.

"Will you honour us by the acceptance of the piece of plate and address before you, in remembrance of the students now present, of their united good feeling and earnest solicitation for your social happiness and long successful professional career?" (Applause.)

To this the Professor replied: "Allow me to address you on this occasion as my friends. My friends,—I have set myself many tasks, and have accomplished many, but I am doubtful whether I ever had a more difficult one to deal with than that which you have so kindly imposed upon me now, viz., that of thanking you in an efficient and proper manner for the very handsome testimonial you have to-day presented to me. I will, however, do my best —no man can do more—to give expression to my appreciation of your good feeling, and of my thankfulness for your very kind recognition of my humble endeavours to do my duties towards you as a teacher and at the same time to approach you as a friend. (Cheers.)

"Your representative, Mr. Edgar, has most kindly alluded to my efforts to enact a part which, in our relative positions, is sometimes difficult to play, viz., that of a teacher and friend. I am afraid I have not so completely and so frequently succeeded in this as he would have you believe; but if I have not, I am egotistical enough to think that the fault is in part your own. For your good, I am obliged at times to be stern, even cross; but believe me,

when circumstances have necessitated this course, I am sorry, and as vexed as the pupil whom my duty compels me to reprimand. 'A loving parent chasteneth the child, with an affectionate and good intent'; 'tis a painful but a necessary course, and I am sure that with you, it is necessary for it to be understood that 'Pritchard means what he says,' to prevent hilarity and other extravagent conduct which would otherwise probably lead on to unpleasantness and trouble. (Applause.) At the same time, I am very pleased to say that little need of this kind of check has been felt by me, and in most instances a look from me has been sufficient. (Applause.)

"I have often desired to have a chance of apologizing for the abrupt manner in which I took leave of the class at the close of the last winter session. I will now avail myself of this opportunity. As you are all now aware, my last lecture of that term I delivered to you on the morn of my wedding day; and I thought that if the fact of what was about to take place had been made known to you, that the whole of the members of the class would have attended at the church, and have consequently neglected their studies. (Applause.)

"Mr. Edgar has nicely given expression to very kind wishes for the future of my wife and myself, and I cannot but feel assured that he is simply, when doing so, giving utterances to the feelings of every one of you. (Great applause.) How can I thank you? 'I am even poor in thanks, but I thank you.' I can convey no more, but I am sure you will be pleased to hear that the union which you, by this munificent gift, so kindly memorialise, promises to be an exceedingly happy one; for I think I have secured a partner best calculated to make a man happy. If her present happiness can be added to, it will be when I inform her of what has occurred to-day. My friends, when in time to come I look upon this handsome cup and illuminated testimonial, I shall not only be reminded of your good feelings towards me, but shall be stimulated to renewed exertions, even though the energy may be flagging. I cannot say more, but I would have you assured that the goodwill towards me, of which you have given such evidence to-day, will not be forgotten by me so long as I have the ability, or the health to wield that ability for your benefit, here or hereafter." (Great applause.)

Jurisprudence.

WYMONDHAM COUNTY COURT.

DEATH FROM HERNIA.

MR. J. C. CHITTOCK (Chittock and Woods, Norwich) appeared for the plaintiff, Mr. Simms Reeve (instructed by Mr. Godwin Amond, from the office of Messrs. Sadd and Linay) being counsel for the defendant, in the action, George Greenacre, miller, Besthorpe, *v.* David Carlton, farmer, Hingham, which was brought to recover the sum of £50 damages for breach of warranty of a horse.

The case was perhaps one of the most important of its kind ever heard in any court, and though primarily affecting sellers and buyers of horses, the decision cannot fail to be interesting to vendors and purchasers of all kinds of live stock, if not indeed to the whole trading community.

On the defendant's application a jury was sworn, and consisted of the following gentlemen:—Mr. John R. Barnard, fire insurance agent; Mr. E. Beeston, yeoman; Mr. John L. Garrett, miller; Mr. Frederick Howard, farmer; and Mr. John Hare, farmer. When the witnesses were directed to leave the Court an unusually large number of persons withdrew; and amongst

those summoned on both sides there were no fewer than six veterinary surgeons.

Notwithstanding the formidable array of witnesses, only three (exclusive of the plaintiff himself) were called; and the case will perhaps be the more easily comprehended by being put in a connective form. Towards the close of 1877 the defendant was owner of what had formerly been an entire that had been subjected to the process of castration, from the effects of which it had every appearance of having fully recovered, and did whatever work was then required of it. The animal was between four and five years old. After seeing the horse, having the utmost facility afforded him for testing it himself, and being fully informed of the operation which it had previously undergone, the plaintiff asked if it was "sound and all over right." The defendant assured him that it was so; upon which, on the 11th of December, but without receiving any written warranty, the plaintiff purchased the horse for £56. The odd £6 was abandoned so as to bring the claim within the jurisdiction of the Court. On getting it home the horse was not put to any work for some three or four weeks; but after that, it was used on the average three days a week, by having to pull a cart containing about a ton weight. On Saturday, the 2nd of March, and without having hitherto shown the least symptom that there was anything wrong, the animal became ill, and died on the evening of the next day. On Monday, Mr. Arthur Holl, veterinary surgeon, of New Buckenham, assisted by Mr. Thomas Auger, of Wymondham, made a *post-mortem* examination, when it was found that death had been brought about by internal Hernia, caused by the inflammation set up through the operation alluded to. In cross-examination, the plaintiff admitted that when he resolved upon having a *post-mortem* examination, he had not informed the defendant of his intention, but it was not from any improper motive, or from a desire to prevent a veterinary surgeon from being present on his behalf at the time, although he was now convinced it would have been better had he done so. In Mr. Holl's opinion there was a slight rupture before the operation was performed, but no one could then have known of its existence, not even the operator.

At this stage of the evidence, his Honour expressed a doubt as to whether the defendant was liable, as he had made no misrepresentation in selling the horse, the defect in which was unknown to him.

Mr. Chittock replied by quoting from the authorities a case in which it had been decided by the Court above, that in the circumstances under which the defendant had sold the horse to the plaintiff, a seller was liable for all faults existing at the time of sale, even to a latent defect whether known or unknown.

His Honour remarked that in the present instance the horse had lived three months, and inquired when the seller's liability was to cease, or how a man was to protect himself by being responsible for a defect, the existence of which could not be known to him?

Mr. Chittock said that he could only protect himself by giving a qualified guarantee, or for a limited period; and if he did not do that, he would always be liable.

His Honour observed that it seemed hard; but upon the authority of the case cited by Mr. Chittock it looked as if such had been ruled to be the law.

In reply to the learned Judge, Mr. Holl said that the horse might have lived three years from the date of the operation, but the rupture was certain to bring about its death sooner or later.

His Honour thought that, taking everything in consideration, it was a case in which there ought to be a compromise. Both the plaintiff and defendant had acted with the most perfect good faith toward each other, and it struck him they ought to divide the loss.

Mr. Reeve expressed concurrence with his Honour's suggestion, but for a

considerable time the defendant resisted every appeal made to him to fall in with it—the learned counsel stating that the reason was an apprehension that it might be said of him, if he acknowledged liability at all, that he had wilfully sold an unsound horse for a sound one, which was impossible, seeing that the plaintiff's own witnesses had acknowledged the defendant could not have known of the horse's defect at the time of the sale.

Eventually the defendant accepted of an offer to settle the matter by a verdict for £30, and half the plaintiff's costs.

The Jury found for the plaintiff accordingly—the foreman accompanying the finding by an expression of their unanimous opinion that the defendant had done the right thing in submitting to a verdict.

Army Veterinary Department.

Gazette, February 4.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, G. Evans, M.D., from the Royal Artillery, to be Inspecting Veterinary Surgeon.

Gazette, February 11.

ROYAL ARTILLERY.—Veterinary Surgeon S. T. Goddard is placed on retired pay.

The undermentioned Veterinary Surgeons in India, recently arrived from England, are posted as follows :—

First Class Veterinary Surgeon C. Steel, to Quetta, for duty with the First Division Field Force.

First Class Veterinary Surgeon T. J. Lang, Royal Artillery, for duty with the Second Division, Peshawur Valley Field Force.

Veterinary Surgeon J. K. Grainger, Veterinary Department, for duty at Muttra.

Veterinary Surgeon J. Mills (E Battery A Brigade), to port of embarkation, for thirty days from date of availing himself of it ; and thence to England, to appear before a medical board.

Veterinary Surgeon F. Smith (A Battery C Brigade, doing duty with G Battery A Brigade), to port of embarkation, for thirty days from date of availing himself of it ; and thence to England, to appear before a medical board.

Veterinary Surgeon W. Oliver (C Battery Second Brigade), to England, from date of embarkation, to appear before a medical board.

Obituary.

WE regret to have to record the death, at the early age of 36 years, of James Moore, junr., M.R.C.V.S., of Great Dover Street, Borough, son of J. Moore, M.R.C.V.S., of Upper Berkeley Street, London. He graduated in 1863.

Mr. Thomas Greaves, junr., of Burnley, has also died, at 37 years of age ; he graduated in 1869.

Mr. William Wallace, of Wolverhampton, who graduated in 1828, has been reported as dead ; as likewise Alfred Challinor, of Bolton, a graduate of 1866.

Morpeth has lost one of its worthy citizens by the demise of Mr. W. Metcalfe Boag, who, though not much known to the profession beyond his

own county—notwithstanding his obtaining his diploma so long ago as 1842—yet worthily represented his profession in Northumberland. The *Newcastle Daily Journal* alludes to him in the following deserved tribute of respect :—"He was a native of Shields, but was brought up and educated at Felton. In early life he went to Kelso, where he learnt the veterinary art under his uncle, who practised in that town and district. He was not satisfied, however, with serving his apprenticeship to the business, but went to Edinburgh, and studied under the late Professor Dick, in the early days of the Veterinary College which he established. Thus fully equipped, he settled at Jedburgh, whence he removed to Morpeth in 1851, succeeding to the practice of Mr. King, who went south to Derby. During the following 27 years he enjoyed a large and increasing practice, having an extensive connection not only among the agriculturists and gentlemen of his district, but also with several large collieries in the west of the county. Mr. Boag, however, was much more than a mere "horse doctor;" he was a well educated, well read, and intelligent gentleman. His superior attainments were soon perceived by the people at Morpeth, and a year after his settlement he was appointed a member of the committee of the Mechanics' Institution, a position he has worthily retained till his death, his last public appearance being as chairman at one of their meetings. He retired from business more than a year ago. He held several public appointments, which he filled with exemplary conscientiousness and fidelity. The last of these—Inspector of Morpeth Market, under the Contagious Diseases (Animals) Act—he resigned three months ago, when the Town Council, by a unanimous resolution, testified to the diligence with which he had performed his duties. Mr. Boag was never married, and has died in his sixty-fourth year. He was of a quiet, retiring disposition, loving his books, and delighting to encourage young men of his acquaintance who had a literary or scientific profession in view. He has left, besides several private bequests, a legacy of £100 to the Mechanics' Institution, to be expended in the purchase of books, and another of the same value to the Dispensary, for its general use."

Notes and News.

DISEASE AMONG AUSTRIAN ARMY HORSES.—According to a telegram from Pesth, an epizoöty, probably Glanders, has broken out among the cavalry and draught horses returned from Bosnia.

POISONING OF SWINE BY BUCKWHEAT.—In THE VETERINARY JOURNAL for 1876, p. 347, there is a very interesting report from Mr. Martin, M.R.C.V.S., of Rochester, with regard to the poisonous effects of buckwheat on lambs, followed by some comments of our own on the toxical action of that plant. According to the *Farmer*, a remarkable occurrence of this nature is chronicled by Dr. Richter in the *Oesterreichisches Landwirthschaftlisches Wochenblatt*. A number of pigs that had been eating largely of buckwheat were noticed shortly afterwards to be off their feed, and their fæces to be dry and hard. These symptoms were followed by strangury, fever, hurried breathing, and death, accompanied by convulsions. On *post-mortem* examination the neck of the bladder was found intensely inflamed in every case, the urinary bladder burst (!), the mucous membrane of the stomach and intestines reddened and swollen, and the lungs and brain congested. In less serious cases, where Glauber's salts and milk were given as medicine, and the buckwheat feeding discontinued, recovery was rapid, and no fresh cases occurred after the food in question was given up.

PROPHYLACTIC TREATMENT OF SWINE PLAGUE.—A correspondent of the *Journal de l'Agriculture*, who has constantly managed to keep his swine free from the Swine Plague, or so-called Hog Cholera, while it was raging in an epizoötic form in the south-east of France, and devastating his neighbour's herds, publishes for the benefit of his fellow agriculturists the details of the treatment to which he believes he owes the immunity of his own stock. Every year, from the commencement of hot weather until the end of October, he gives each of his pigs a dose of sixty to eighty grammes of Glauber's salts once a fortnight; and as soon as the disease appears in his neighbourhood, and as long as it prevails there, he supplements this treatment by the daily administration of two spoonfuls of "phenic vinegar," which he prepares by adding fifteen grammes of pure phenic acid to a litre of ordinary vinegar, such as is used for culinary purposes.

HIPPOPHAGY IN PARIS.—During the year 1878 the horse slaughter-houses of Paris provided the public with 11,319 horses, asses, and mules as food. In 1877 the number was 10,619; so that there is an increase of 700. This augmentation is the best proof that horse-flesh is healthy, agreeable, and nutritive, while its price is markedly less than that of ox beef. A horse-flesh establishment was opened in London last May, but it did not have the success desirable, owing to its having been established by a Frenchman who did not understand our language, and who, besides, had to return to France because of illness. Nevertheless, he received the 1,200 francs offered by M. Decroix, Principal Veterinary Surgeon in the French Army, to any one who should keep such an establishment open in London for three months. The Committee of the Horse-Flesh Society of Paris (9, Rue St. Benoit) now offer a medal of honour to any English butcher who will regularly sell this flesh in a special shop for at least three months.

HYDROPHOBIA IN FRANCE.—It is one of the duties of a French prefect to give information of the particulars of every case of Hydrophobia in the department: but, as may be supposed, these political servants very often neglect a matter which has so little party interest. For the eight years included between 1869 and 1877 only 35 out of 86 departments returned replies to the official inquiries. On these, however, Dr. Proust, in his own name and that of Professor Bouley, has recently issued an interesting report. Professors Tardieu and Bouley had previously given an abstract of the facts they had gathered with regard to the eighteen years from 1850 to 1868. Their statements show that only half the persons bitten by a mad dog or other animal escape Hydrophobia. The number of deaths from this cause during the twenty-six years in question of which they have notes was 740, or a little less than 28 per annum. More men than women were bitten, but sex made very little difference in the mortality. The liability to be bitten of young persons from five to fifteen years of age was found to be greater than that of their seniors, though the fatality of the bite was not so great—not more than one-fourth—while among aged people, from 60 to 70, it amounted to two-thirds, and above that age to three-fourths. Children, therefore, seem to be less readily affected by the poison, though their chances of meeting with the accident are greater. The animals reported as causing the bites during the twenty-six years were —dogs, 707; wolves, 38; cats, 23; fox, 1; cow, 1; and the disease was pretty equally distributed over all the seasons. Observations on the incubation of the disease show that in a large proportion of cases it declares itself within the first sixty days of the inoculation. Thus out of 221 attacks, 139 occurred within three months of the bite, 54 between sixty and one hundred days, 21 between one hundred and one hundred and eighty days, and 3 at yet later periods. The time was generally longer in old people than in young ones. The disease lasted from one to fifteen days; the greater

number of cases holding out about four days. Cauterization, either by actual burning or with butter of antimony, is generally resorted to by French surgeons. This remedy seems to have a great influence in preventing the effect of the poison. In a given number of cases duly operated on, the mortality was only 35·7 per cent.; while out of 117 persons left to themselves, 96, or 82 per cent., died. Facts like these prove that the great evil is not the number of deaths, but the terror and anxiety caused to persons bitten by a strange dog. And the moral is that somebody ought to be made responsible for every dog in the country.—*Pall Mall Gazette.*

SANITARY REGULATIONS FOR DAIRIES, COWSHEDS, AND MILK-SHOPS.—The *Gazette* of Tuesday last contains an Order in Council under the Contagious Diseases (Animals) Act, 1878, providing that every local authority shall open and keep a register of all persons from time to time carrying on in their district the trade of cowkeeper, dairyman, or purveyor of milk; and also providing that, after a maximum period of two months, dating from the publication of notice by the local authority, it shall not be lawful for any person to carry on in the district of the local authority the trade of a cowkeeper, dairyman, or purveyor of milk unless he is registered. New buildings hereafter to be occupied as dairies or cowsheds are to have proper provision for lighting, ventilation, cleansing, drainage, and water supply, "to the reasonable satisfaction" of the local authority; and in all buildings, new or existing, this provision must be such as is necessary or proper for the health and good condition of the cattle, the cleanliness of milk vessels used for containing milk for sale, and the protection of the milk against infection and contamination. Local authorities may make regulations with regard to the cleansing of dairies, cowsheds, milk-shops, and milk vessels. The Order contains other provisions to prevent the contamination of milk in the case of disease; and no person suffering, from a dangerous infectious disorder, or having recently been in contract with a person so suffering, is to be allowed to milk cows or handle vessels used for containing milk, or assist in the trades mentioned in the Order, until all danger of infection has passed away. The Order extends to Great Britain only, and takes effect immediately.

TRICHINOSIS IN SPAIN.—Trichinæ having been discovered in Barcelona in a pig from Navarre, an investigation has shown that the disease appeared in that province two or three years ago, and has been greatly extending.

THE REINDEER.—The reindeer replaces the horse and the ox where these animals cannot be utilised. In the Russian Empire there are computed to be about 1,000,000, of which 680,000 are in Europe. In Siberia there are more than 300,000. The Koraks of Eastern Siberia, who are nomads, and live in skin tents, have immense herds of reindeer, some tribes owning not less than 15,000. These supply their food, clothing, and means of transport. The pride of the Laplanders is also to have large herds of reindeer for their sledges. They drink the milk of these animals, and make cheese of it; they clothe themselves with the skins, and eat the food, which is pronounced good.

NITRITE OF AMYL IN TETANUS.—Prof. Stalker, in the *College Quarterly* (Iowa), says:—"Within the past few months a new remedy has been tried in the treatment of the disease, and if we are to trust the evidence of those who have made the test—and there seems to be no reason for doubting it—with most satisfactory results. The remedy consists in the hypodermic injection of nitrite of amyl. The nitrite is given in doses of twenty minims to thirty minims, twice a day. Recovery is reported in every instance. The operation is a simple one for the veterinarian; and should it prove as successful as it would now appear, it is an addition of no small value in the treatment of one of the most intractable diseases the veterinarian has to deal with.

TURCOMAN HORSES.—Should the Russian Government succeed in its present enterprise against the Turcomans, and press them afterwards into its service in the manner in which it has succeeded with the Kirghiz, the Czar will have at his disposal the finest irregular cavalry in Asia. The excellence of the Turcoman horse is as proverbial as the boldness of its master. Originally of Arab breed, and degenerate so far as beauty is concerned, it nevertheless, in other respects, fully maintains the honour of its descent. For fastidious Europeans its head is too long, its chest too narrow, and its legs too weedy, but in pace and endurance it excites the wonder of all travellers who penetrate to the Turcoman territory. Instances are common in Central Asia of a Turcoman horse performing 600 miles in six and even five successive days. This endurance, of course, is not obtained until after a certain preliminary training. When a foray is about to be undertaken the Turkoman chiefs give their followers a month to get their steeds into good condition. Six pounds of hay and three pounds of barley are then administered daily to the charger, and for half an hour in the morning he is ridden at full speed. To enure him to thirst, only a small allowance of water is given him during the period of training. While on the march his food is mostly kooroot, small balls made of ground maize, barley flour, and raw sheep's fat. His pace is alternately a gentle trot and long walk, every two or three hours a halt being made to allow him to graze and his rider to snatch a few moments of sleep. Marching unceasingly in this manner, the Turcomans cover much ground in a few days, and display an amount of endurance which is considered wonderful even by other Turkestan nomads. The breed owes its origin to a present of 4,200 Arab mares which Tamerlane once made to the Turcomans, and to a later present of 600 by Nadir Shah to the Tekkes. An ordinary horse will fetch from 40 to 50 guineas, a second-rate one about £150, while a thoroughbred is regarded as simply beyond price. Among Russian officers belonging to the Turkestan army there is great emulation to obtain a thoroughbred Tekke horse, and on this account an expedition against the Turcomans is always popular at Tashkend.—*The Globe.*

Correspondence, etc.

VETERINARY PATHOLOGY AND THE MEDICAL PROFESSION.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—In commenting on your report of the meeting of the "Pathological Society of London," I shall doubtless not be alone in expressing my surprise at the remarks of Mr. A. H. Smee, concerning "Garget." That gentleman's statement: "*Nor was it much known to veterinary surgeons*," is, I venture to say, a presumptuous assertion. Had Mr. Smee gone through the whole vocabulary of cattle diseases, he could not have selected one better known, not only to the veterinary profession, but also to the cow-leech and dairyman, than the one vulgarly called "Garget"; and he would experience difficulty in finding any work on cattle pathology in which this disease is not mentioned.

Mr. Smee's audience must, indeed, have had an intellectual treat in the paper he gave them, and the veterinary profession—which could have told him far more than he told his hearers—must be very grateful to him for leaving his own shoes and endeavouring to step into theirs. Vaccination by medical men during the Rinderpest was sufficiently undignified and absurd, but when Mr. Smee's curiosity leads him to select "Garget" as a likely disease to escape the notice of a dairyman, it is almost laughable.

Now, if there is one disease more than another that would be the first to attract the attention of a dairyman (if he was worthy to be called such), it would be one affecting that person's source of income—viz., a disease interfering with the secretion of milk, and that one of all others would be "Garget," at once detectable by its local symptoms. If the human being had taken the place of the cow in Mr. Smee's paper, I can hardly think he would select affections of the mammary gland during nursing as those most likely to escape the notice of the medical attendant and monthly nurse, not to mention the constitutional disturbance experienced by the patient. Yet here in cattle is a malady of every-day occurrence, patent to the commonest observer, known for centuries; and yet, notwithstanding all this, Mr. Smee comes forward with all the importance of a recent discoverer, to lighten our dark minds, and make manifest what was known before he was born.

Regarding any connection between Diphtheria and "Garget," that is a subject which will be introduced by Professor Axe at the next meeting of the Central Veterinary Medical Association, when I doubt not it will be fully and ably discussed by the gentlemen who are members of that body.

If the medical profession has any wish to advance in the knowledge of comparative pathology, it will get on none the faster by ignoring the sister profession, from which it would derive most help.

As I observe, in a footnote, that you will have some comments to offer in your next issue, regarding Mr. Smee's paper, I will not trespass further on your space than to say that the above remarks have been written without prejudice, and with the desire to render honour to whom honour is due.

Yours faithfully,

J. WOODROFFE HILL, F.R.C.V.S.

Wolverhampton, *Feb. 1st*, 1879.

P.S.—I believe Prof. Duguid is connected with the Brown Institute, yet, strange to say, his name is omitted in the list of medical gentlemen nominated to afford *much valuable information* concerning a *veterinary subject*—"Garget," to wit.

THE FELLOWSHIP DEGREE.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Will you do me the favour to find a corner in the next issue of the VETERINARY JOURNAL for the following few remarks? First, I am desirous of intimating to the profession that no diminution of interest in its welfare has caused me to be absent of late from some of the meetings of Council, the explanation being that in my weakened health I require prolonged rest. I had quite hoped to have attended the last quarterly meeting, where I should certainly have urged dissent from the decision which was arrived at in respect of the educational test for candidates for the Fellowship Degree, as I have learnt with regret from the proof sheet of the proceedings, which has come before me in exercise of my function as a member of the Publishing Committee, that which I believe to have been a serious digression from the original intention. I believed the design in establishing a higher degree was to insure the stamp of genuine metal in such representatives of our body; and I think it cannot but be acknowledged a humiliating reflection, how a discerning public may infer to the disadvantage of *members* of our profession holding the lower qualification, when for the higher (the Fellowship), the standard is comprised in the following requirements:—

Firstly, such knowledge of Latin as to write a Latin prescription, translate a prescription from Latin (assuredly but a mean test of proficiency, and barely a guarantee of ability to construe an independent line of Latin composition). Secondly, such acquaintance with ordinary rules of arithmetic

as may be necessary for carrying on the business of a veterinary surgeon, and for which probably the capacity for casting up the columns of his ledger and his bills might suffice. Thirdly, in writing a composition or a letter on a given subject with correctness and facility of expression and grammatical accuracy; for which and the foregoing educational attainments the School Board nowadays can scarcely fail to qualify. Therefore, may we hope to have all *Fellows* in the future, and if so, may I ask, *cui bono*, and what gain to the profession or to the public may be expected to result from the distinction of the Second Degree? I hope sincerely that in making these observations, which I conceive to be a duty, whilst an enforced absentee, *pro tem.*, from my post, I may have urged nothing to assail the sensitiveness of any, and my desire to help and not to hinder the good of our profession has alone prompted me to trespass on your space and your readers' notice.

Yours faithfully,

114, Mount Street, London, J. ROALFE COX.
January 24th, 1879.

DEAR SIR,—In the current month's number of the VETERINARY JOURNAL I note a report of the proceedings of the Council of the Royal College of Veterinary Surgeons, and am surprised to find they have thought fit (and apparently after little or no discussion) to adopt the Report of the Committee appointed to consider the educational tests required from candidates for the Fellowship Degree. That the standard was of too high a character in the first instance I am prepared to admit, but how it will at present secure a sufficiently high social or educational status I must confess I am at a loss to perceive. I consider this change a retrograde step of very great importance, and calculated to expose the Degree to ridicule. I have no wish to appear selfish or egotistical, but I do hope the Council will reconsider their decision, and not allow it to go forth to the world that less is required of a member of the Royal College to obtain the Degree of Fellow than is demanded of a student to matriculate for entrance to the College. Veterinary surgeons have many drawbacks in their professional career which tend to prevent them from enjoying that status in general society which is their due; and I had hoped the Degree of Fellowship, fought for and won, would have been a great stimulus towards raising the profession to a standard equal to that enjoyed by the sister profession. We ought to take this matter in hand, and I would suggest that you should call a meeting of the Fellows in London, to debate this and any other matter connected with this subject, with the view to submitting a report to the Council of the Royal College of Veterinary Surgeons for their approval and careful consideration.

Yours faithfully,

BEN. H. RUSSELL, Captain, F.R.C.V.S.

Grantham, *February*, 1879.

THE TITLE OF VETERINARY SURGEON.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—This subject has of late been so prominently brought to notice in the pages of the VETERINARY JOURNAL, and the urgent necessity of a "penal clause" so powerfully advocated by yourself and supported by able letters from numbers of your correspondents, that the members of our profession, far and wide, must see that the time has arrived for them to unite in endeavouring, by every means in their power, to obtain that protection without which, I fear, all attempts at professional and social advancement will be futile.

As to the title of "Veterinary Surgeon" being of ancient or of comparatively modern origin, matters but little. The fact that graduates of the Royal College of Veterinary Surgeons alone have the exclusive right of assuming it remains indisputable; and this being the case, it is all the more to be regretted that we are not quite unanimous in our wish to obtain legal power to prevent the unqualified practitioner from continuing to wear his "borrowed plumes."

Perhaps, since the publication of your able editorial in the October number of the Journal, in which the views of the majority of our colleagues are so fully expressed, many of those who, for reasons of their own, were unfavourable to the scheme, may on further consideration have withdrawn their opposition. Let us hope so; for we can ill afford to have dissentient views in our ranks.

The arguments that "a good practitioner does not require protection from the quack," and "that we are agitating in favour of a movement having for its object the suppression of quackery," have been so completely upset by your subsequent remarks as to require no further comment.

Your denial of the latter statement is certainty echoed by all right-minded members of our profession; for in our endeavour to protect ourselves we do not for a moment contemplate the slightest injury to the empiric. By all means let him practice his art, and do his best to provide the necessaries of life for himself and family; but, at the same time, let any attempt on his part to deceive the public, by usurping a title to which he has no right, be made a punishable offence. Let the "Farrier, Cowleech, Canine Surgeon," or whatever name he may choose to adopt, enter the lists fairly with the veterinary surgeon, and then if Squire A—— or Farmer B—— thinks proper, for pecuniary or other reasons, to employ the former in preference to the latter, he is at perfect liberty to do so.

In endeavouring to obtain legal protection we are not altogether acting from selfish motives, but also for the benefit of the public generally; for, as you observe, "they (the public) cannot always judge as to the merits of qualified and non-qualified men, nor do they often care to inquire if every man who designates himself a "Veterinary Surgeon" has really any claim to the title. That this is the experience of many, more especially country practitioners, very few can deny.

With further reference to this subject, you remark that "neither can the profession protect itself from the stigma which attaches to their *lâches* and misconduct, but must submit to the degradation of having their sins of omission and commission laid to its charge."

We have only to refer to the frequent newspaper reports to testify to the truth of this; and, unfortunately, we cannot deny that the reputation of the profession is considerably damaged by such disgraceful scenes as those described by you, and by your correspondent "Verbum Sap." I could add to their number, but refrain from doing so, as it would be needlessly trespassing on your valuable space, and no further illustrations to prove the urgent necessity of protection for ourselves and the public are required.

I am, dear sir, yours, very truly,

"NEMO."

A "QUID PRO QUO."

To the Editor of the VETERINARY JOURNAL.

SIR,—The medical faculty have charged members of the profession with ignorance concerning that disease they call "Garget," and known to us as Mammitis or Mastitis, in their attempt to prove an analogy between the malady and Diphtheria. What will they now charge our profession with,

after perusal of the following advertisement, which appears in the *Daily Telegraph* of the 13th inst.? :—

"THE CHILDREN'S LIFE PRESERVER.—EDGAR'S CROUP LOTION, a certain cure for croup. Also the best-known remedy for bronchitis, sore throats, hoarseness, or loss of voice arising from cold or over-exertion in singing or speaking.

"EDGAR'S CROUP LOTION.

"Prepared only by the Proprietor, James Edgar, Chemist, M.R.C.V.S. and L.V.M.S., Dartford, Kent. Observe the name on the Government stamp of each bottle. Retail of all Chemists, in bottles 2s. 9d. each."

We are certainly advancing, and in a mutual ratio. Medical men are deputed to investigate the so-styled "Garget," as affecting cows. We must watch with some anxiety the "*cui bono*," for they have a bold "card" to beat here, as Edgar's Croup Lotion is a "*certain cure*." Well, it's fair "poaching," perhaps; and Dr. Warburton still lives—he who doctored horses, cows, and other "things," and human beings as well. Progress, indeed—bah!

Yours truly,

February, 1879. "ARTEMUS SECUNDUS."

VETERINARY OBSTETRICS.

To the Editor of the VETERINARY JOURNAL.

SIR,—Since my communication advocating the use of the chain saw and chain sector in the operation of embryotomy, Messrs. Arnold and Sons have kindly made for me the above instruments. I have been waiting for an opportunity to give them a practical trial, but a case requiring their use not having occurred, I have tried them on fœtal calves, *ex utero*, and am fully convinced, from the ease and rapidity with which the neck was cut through, and the fore and hind limbs detached, that some of the greatest difficulties met with in obstetric practice will now be easily overcome.

I remain, yours respectfully,

Sleaford, *February*, 1879. J. HOOLE.

THE CASTRATION OF CRYPTORCHID HORSES.

To the Editor of the VETERINARY JOURNAL.

SIR,—I am induced to write to you in consequence of being an eye-witness to an operation upon a rig horse by Farmer Miles the other day. I believe that most veterinary surgeons in the United Kingdom have heard of Mr. Miles, but many, perhaps, are perplexed as to what they are to think of him—whether he really is what he professes to be, or an impostor. This being my belief, and delighting to honour merit whenever and wherever I may find it, I thought, perhaps, the evidence of a member of our profession, however humble, might in a degree prove acceptable to some of the readers of your valuable Journal.

On Monday last, the 6th inst., I went to Greenford, by invitation, to see the farmer operate upon a rig horse; and I can say the operation was most scientifically and cleverly performed—the way in which the missing testicle was brought to light was truly wonderful. I am also of opinion that Mr. Miles' method of castration, looking upon it as a simple operation, and putting the question of rigs on one side, is superior to the usual method practised in this country, and one that I should like to see generally adopted, as it is both scientific and humane.

I should advise those of my brother practitioners who have not had an opportunity of seeing Mr. Miles operate, by no means to condemn him until they do. No doubt he has made enemies by his first ill-advised and boastful circulars; but that he erred in ignorance of our English customs, and not wilfully, I think any one who has ten minutes' conversation with him will be convinced of.

Should you feel disposed to consign this to the wastepaper-basket, or publish it in your next, it is equally at your service.

I remain, sir, your obedient servant,

J. H. BENNETT, M.R.C.V.S.

Havering-Atte-Bower, Essex, *Jan.* 10.

NOTICE TO CORRESPONDENTS, ETC.

THE great pressure on our space has compelled us to withhold several communications and reports of Societies until our next issue.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from W. Blakeway, Stourbridge; J. Roalfe Cox, London; Professor Walley, Edinburgh; E. Decroix, Principal Veterinary Surgeon, Paris; A. Gunn, Beauly, N.B.; J. W. Hill, Wolverhampton; Captain Russell, Grantham; L. Butters, Norwich; W. B. Walters, Royal Engineers, Chatham; J. Hoole, Sleaford; Arnold and Sons, London; "Cyclop"; G. Gray, Bakewell; "Nemo"; A. L. Butters, Sunderland; T. W. Mayer, Cirencester; S. Locke, Manchester; "Artemus Secundus"; F. F. Collins, Principal Veterinary Surgeon, Bengal; T. Moore, London; J. D. Overed, Blofield; J. McFadyean, Edinburgh; W. Broughton, Leeds.

BOOKS AND PAMPHLETS: *O. Larcher*, Mélanges de Pathologie Comparée; *H. Flemming*, Physiologie und Allgemeine Pathologie der Haussängthiere; *E. Zorn*, Die äusseren Krankheiten der Landwirthschaftlichen Hausthiere; *R. Willis*, William Harvey: a History of the Discovery of the Circulation of the Blood; *R. Neale*, The Medical Digest; *W. Wilckens*, Form und Leben der Landwirthschftlichen Hausthiere.

JOURNALS, ETC.: *Mark Lane Express; Annales de Méd. Vétérinaire de Bruxelles; Agricultural Gazette; Wochenschrift für Viehzucht und Thierheilkunde; Der Thierarzt; Journal of the National Agricultural Society of Victoria; Repertorium der Thierheilkunde; Lancet; Medical Press; Revue Vétérinaire; Raeuil de Médecine Vétérinaire; Archives Vétérinaire; Oesterreichische Vierteljahrsschrift für Wissenschaftliche Veterinärkunde; Archiv für Wissenschaftliche und Practische Thierheilkunde; British Medical Journal; London Medical Record; Sportsman's Journal; Live Stock Journal; Nature; Broad Arrow; United Service Gazette.*

NEWSPAPERS: *Irish Times; Leinster Express; Scotsman; Birmingham Gazette; Wilts and Gloucester Standard; Edinburgh Courant; Newcastle Daily Journal.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, VETERINARY JOURNAL, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

APRIL, 1879.

RECORD OF FOUR OBSTETRICAL CASES RECENTLY OCCURRING IN EQUINE PRACTICE.

BY A. E. MACGILLIVRAY, V.S., BANFF, N.B.

THINKING the following cases might be of interest to the profession, three of them showing how easily extreme difficulties may at times be overcome, and the other being of very rare occurrence, I have hastily strung together the annexed remarks.

1. I was called express one night in February last to a mare in foaling. On arriving at the farm, I found the animal very uneasy and straining pretty severely; part of the *decidua* being protruded and hanging down from the vulva. I observed that it appeared to be dead and partly putrid; and, drawing the owner's attention to it, I remarked that the foal was dead, and had likely been so for some time. The mare was over nine months gone with foal.

On exploration, I found a curious state of matters. The withers of the fœtus, with part of the neck and shoulders, were presented and jammed right into the pelvic cavity, while the fœtal head and fore legs, being both turned back, so to speak, were retained in the abdominal cavity. The fœtus presented itself lying on its left side, with its head and fore legs turned to the mare's near flank. Luckily, the mare was very "roomy," and the fœtus, although large, not at full maturity; so that,

with considerable exertion, I got it so far pushed back into the abdominal cavity as allowed the turning round of the head into the pelvis. Having corded the lower jaw, I again pushed back the fœtus, and after not a little trouble I got up first one and then the other fore leg, and then all was soon over.

As the foal was much swollen and emphysematous, I should say it had been nearly a week dead before delivery. With a fully matured fœtus, the above would have proved an extremely difficult presentation.

2. On the evening of the 5th March, I was sent for in a great hurry to attend at a farm in the vicinity of Banff, where a mare had been in foaling all through the afternoon. On my arrival, I found the mare in great distress, sweating profusely, breathing hurriedly, and apparently severely pained. No sign of fœtus or *decidua*, no fulness of vulva, and no discharge of the usual *waters*. The mare's time of foaling was within a week of being fully up.

On exploration, I found a very serious state of matters—in fact, a *transverse* presentation. The body of the foal lay right across the uterus from side to side, the fore part being in the mare's near side flank, and the hind quarters in the off side. All the four extremities were presented, and were well into the pelvis, being within three or four inches of the outside. Failing to discover any traces of a fœtal head, I resolved to push back the four extremities of the foal, and to extract by the hind quarters; but owing to the extremely confined state of the pelvis, and the entire absence of the usual lubricating fluids, this proved to be a rather difficult operation. Having corded both hind legs above the fetlocks, however, and got an assistant with a long and strong, but wiry arm, to push back the fore extremities into the abdomen, I put gentle traction on the cords, and with my own hand and arm inside endeavoured to conduct the hindquarters into a proper position for extraction as proposed. This I at last accomplished; then continuing my assistant's retropulsion of the fore quarters, I put five or six men on to the hind quarter cords, and the *foaling* was over in a few minutes.

The foal in this case had been dead a day or two, and was deformed; the neck being twisted round to the off side, with

the head lying into its own ribs behind the shoulder. It retained this position after delivery. One of the ears was turned right over the "crown of the head," and remained firmly in that position. Owing to the situation of the fœtus *in utero*, it will at once be seen how utterly impossible it was for any one to feel the head, it being twisted right round, and in below the foal's off side ribs.

3. The other evening, the 8th March, I was asked to go as soon as I possibly could to a farm some five miles away, to a mare very "badly in foaling." On arrival, I found the animal in a frightful state. The perspiration was literally pouring off her in every direction, the breathing was greatly excited; the labour pains were excessive, and she was plunging about in the stall to such an extent that it required three men to hold her *In addition to all this*, I found two strong men with bared arms working away like horses, *trying to foal her!* Two legs were protruding from the vulva, with ropes dangling from them, and I was informed that all that was necessary was to get up the head, which they could not do owing to its coming "crown of head-foremost!" I think I will be excused when I say that I did not hesitate long, nor take much time to choose words, in expressing my idea of the doings of the two strong men!

On exploration, I found the fœtal head coming "poll" foremost and well into the pelvic cavity. I endeavoured to alter its position, by pushing back the poll and pulling forward the muzzle, which latter I could easily reach. After trying this two or three times without success, I slipped a cord well on to the upper jaw, and handing this to an assistant, with orders to pull gently, I then pushed with all my strength the foal's "crown of the head" back towards the abdominal cavity, when the muzzle quickly assumed the desired position and soon appeared outside. My two strong friends now thought the case gained, and were for pulling away the fœtus instanter; but I said "not so fast," and ordered a light to be brought nearer, so that I might clear the corded feet of part of the decidual membranes which had been entangled in cording them. In doing this, I discovered that my two friends had got hold of *two hind feet and legs*, instead of fore ones! So that the state of matters was now

worse than ever; the head and two hind extremities of the fœtus being all partially protruding from the vulva. I was excessively irritated by this discovery. However, after renewed exploration, I at once decided to try and return the head and fore quarters, and extract the fœtus per hind quarters. With extreme difficulty this was at last accomplished; I first returned the foal's muzzle to the original position, then got an assistant to push with all his power in the foal's "poll" till he was as far in as he could reach, and finally putting half a dozen men on to the corded hind quarters, very soon the act of foaling was over. The foal had been dead for some time.

In this case I have no doubt certain scientific parties, on finding the dilemma they were in with the hind quarters and head, would have resorted to the *knife* and so got rid of the head or hind quarters; but it must be kept in mind that the patient was a mare, and not an old cow; and I have no hesitation in saying that, if the knife had been used in either of the two latter cases, the life of the mother would have been sacrificed. Mares will not stand any great amount of manipulation during delivery, a mere scratch being often quite sufficient to cause fatal results.

I cannot leave this case without remarking on the extraordinary position in which the foal was when the head and hind extremities were both outside the vulva. As mentioned, I made an exploration inside, and found the fœtus twisted right round and, as it were, folded on itself; so that the knees of the two fore legs (which latter were luckily turned back) were resting on the croup of the fœtus. The mare was nearly ten months pregnant; so that the foal was almost full grown.

4. This was a most peculiar case. (I copy from an "Obstetrical Record" which I keep.) The mare, within two months, had had several attacks of colicky pains, accompanied by complete obstruction of the bowels. During the first attack, she received fourteen drachms of aloes in two doses, and was not purged; but on the third day of the attack she began to pass fæces of a natural consistency. During the second attack, she had ten drachms of aloes in one dose, but no purging followed, merely a return to healthy defecation at the end of thirty-six hours. During the last and fatal attack, she got in two or three doses nine-

teen drachms of aloes, which on the third day produced very mild purgation.

On the evening of the fourth day she was considered nearly convalescent, ate her supper well enough, *but was dead by* 3 *a.m. next day!*

During all three attacks she showed slight straining pains, as if wishing to micturate. This was so evident and so frequent during the last attack, that as she was within a fortnight of foaling, I several times explored, *per vaginam*, to discover if the *os uteri* was in any way relaxed. Nothing of the kind, however. The *os* appeared to be away back at the end of an abnormally long, narrow, and tapering vagina, the far end of which was constricted in a very unnatural degree.

The *post-mortem* inspection disclosed a curious state of matters. The bowels were healthy. The uterus was *completely* twisted round (full *torsion uteri*), and part of the bowel next to the rectum was partially entangled in the twist. The torsion, of course, took place at the cervical and contiguous parts of the uterus, which accounts for the great constriction of the inner portion of the vagina. The torsion was from right to left, and I am confident it was a complete twist.

On slitting up the uterus, the fœtus, enveloped in the placenta, slipped clean out of the cavity, the placenta having altogether lost its hold of the organ. Endometritis to a very serious extent was present, the inner coating of uterus being quite black and disorganized. When the placenta had lost hold of the uterus, the organ did not contract, and owing to the presence of the fœtus, hæmorrhage had taken place, there being a considerable quantity of coagulated blood lying between the placenta and uterus. Death had apparently been caused by the Endometritis, *either directly or indirectly*—the latter, if I mistake not, as the signs of blood poisoning were pretty general throughout the whole system; which blood poisoning had no doubt resulted from absorption of part of the dead material (or diseased products) about the inflamed and disorganized inner uterine coating.

Queries.—Was the torsion brought about during the severe rolling and tumbling which took place during the first colicky

attack? I was *then* told, on my arrival, that she had been "awfully bad, and struggling frightfully."

Also, was not the entanglement of part of the bowel in the torsion the chief cause of the repeated occurrence of obstruction? This entangling of bowel, in such cases, is mentioned in Mr. Fleming's "Veterinary Obstetrics."

PARTURIENT APOPLEXY *(ECLAMPSIA PUERPERALIS*)*:—THE LIGHT THROWN UPON IT BY ITS ANATOMICAL LESIONS.†

BY PROFESSOR FRIEDBERGER, MUNICH VETERINARY SCHOOL.

THE subject of this communication was an eight or nine years old cow, which had been the property of the same owner for several years, and who stated that she had always been in poor condition until about six weeks before calving, when she first began to show signs of improvement. She was receiving clover-hay as food.

The owner was surprised when he entered the cow-shed on October 8th to find the cow had calved.

The animal first showed symptoms of illness on the evening of the 9th, when veterinary advice was sought, and then the diagnosis was "Eclampsia Puerperalis" (Parturient Apoplexy). (I merely remark in passing that nothing was suggested to me about cold being the possible cause.)

After the disease had existed about thirty-six hours, the owner saw that death was fast approaching; so he (according to the veterinary's directions) stabbed the cow, but only about four quarts of blood flowed from the wound.

Thanks to the friendly invitation of my colleague—the attend-

* This is the term used by the Author, but as it has not been introduced into English Veterinary Literature, I have translated it by the more appropriate name of "*Parturient Apoplexy;*" for when we consider the derivation of the word *Eclampsia*, which, according to Dunglison, is "Flashes of light before the eyes" (ἐκλαμψις—from ἐκ—*out* and λάμβω—*I shine*), and that it cannot be proved that the sensation of light flashing before the eyes is present, I fail to see its application. It is also rather an abuse of terms to apply "*puerperalis*" (*puer*—child, *parere*—to bring forth) to our animal patient.—Trans.

† Translated from the *Deutsche Zeitschrift für Thiermedicin* by G. A. B.

ing veterinary surgeon—I had the opportunity of making the autopsy, about eight hours after death, and the following is the result.

The carcase weighed 150 kilo. (roughly, about 300 lbs.); it was not particularly fat, and that which was present had a yellowish-white colour, and was tolerably firm. The muscles were of a brownish-red hue. The blood in the thoracic cavity had firmly coagulated, and was of a liver colour; that which had been exposed to the air was of a bright cherry-colour and coagulated. A large quantity of coarsely masticated food was found in the mouth and fauces, and portions of it had passed through the posterior nares into the nasal chamber. The œsophagus was normal. The rumen and reticulum were normal, and the epithelium firm. The omasum, contrary to rule, was empty; some of its leaves were highly injected, and the epithelium partially swollen, but firmly attached. The abomasum was slightly reddened. The small intestines were dark-red, and presented the appearance peculiar to that of animals which have not been bled, viz.: the veins were tolerably filled with blood. Nothing particular was observed about the mucous membrane. The large intestines were likewise red externally; the contents were fluid, and of a green tint. The mucous membrane was somewhat swollen, but not otherwise altered, except a portion of the posterior part of the colon, which was distinctly hyperæmic and seemed unusually thickly covered with mucus. The rectum contained a quantity of a dark-greenish material, covered with mucus, the surface being tolerably hard, whilst the interior was soft. The liver was small, the colour normal, and consistence firm; it was filled with blood. The gall-bladder contained about ½ litre (1 pint) of brownish-green and strongly fibrinogenous bile. The spleen was normal in size and appearance. The kidneys were natural in size, and yellowish-grey points studded the surface of some of the tubes; when cut it gave a grating sound, and the coloured parts extended in places as far as the tubular portion, thus giving them a remarkable firmness. The bladder contained two litres (2 quarts) of pale yellow-coloured urine, having a watery consistence and alkaline reaction, and distinctly albuminous. The mammæ were well developed, elastic, and full

of milk.* The vaginal mucous membrane was speckled with bright red ecchymoses; otherwise it was pale. The os uteri was almost closed, and was covered with thick clear mucus. The uterus was already considerably contracted. It measured 70 centimètres (27½ inches) from the cervix to the commencement of the cornu, and 30 centimètres (11½ inches) at its greatest diameter. Its muscular coat was thick, and its cavity contained about ⅓ pint of a saffron-yellow strongly fibrinogenous fluid, without a trace of disagreeable odour. The mucous membrane of the os uteri resembled that of the vagina; at the posterior part of the uterus and cornu in which the fœtus had been carried, it had a diffused faintly cyanotic colour; whilst the unoccupied cornu was pale in colour. In the anterior portion of the lately occupied cornu there were some recent hæmorrhagic glomeruli; otherwise nothing conspicuous was seen, either on the mucous membrane of the uterus, or on any other part of the generative organs. The heart was in size, colour, and consistence, normal; the right cavities contained a small quantity of firmly coagulated blood; in the endocardium not a trace of imbibition could be detected, only a long-standing contraction of a portion of the mitral valves, together with the remains of an atheromatous condition of the aorta, were observed. The trachea was covered with a green masticated pulp on its anterior walls, the bronchial tubes being filled with the same kind of matter. The lungs were pale, and completely anæmic in some places; there was vesicular emphysema in others, and indications of Chronic Tuberculosis were present. The bronchial glands were in the last stages of Tuberculosis.

Examination of the cranial cavity:—The head had already been removed from the body. The dura mater was normal; a well-formed blood-coagulum and greyish-yellow fibrinous thrombi were removed from the falciform sinus. The veins at the base of the brain were only partially and incompletely filled with fresh coagula; the fine capillaries of the pia mater, both at the base and on the convexity, were distinctly injected. The convolutions not very well marked. On the right hemisphere

* As the butcher expressed it, "when he took the udder off, a large quantity of milk flowed out."

there were small hæmorrhagic spots; these penetrated about one millimètre into the substance of the brain. The arachnoid space (between the pia and arachnoid membrane) was filled with an "aerated," slightly red fluid, which could have been easily overlooked by a casual observer (*Hydrocephalus externus* mixed with air). The brain itself was broken up and collapsed; when cut into, it appeared extremely anæmic. The grey cortical substance was less strikingly distinguishable from the white, and formed a well-marked contrast with the dirty-red finely-injected surface. *Puncta vasculosa* could not be detected. This high degree of anæmia affected the whole organ in a uniform manner, and gave it a very œdematous appearance. When cut with a knife, however, it did not cling to the blade, as it does in softening of the brain. Nothing abnormal was detected in the ventricles. The choroid plexus was slightly hyperæmic.

From the fact that the animal had been partially bled and the intestines partly removed, we must suppose that the *post-mortem* changes were somewhat modified; yet from the above report of the autopsy, we cannot conceive them (the changes) to be due to putrid infection, for the most striking pathological changes were found in the brain, which one would naturally suppose to be the case, from the symptoms exhibited during life. And if we take into consideration the other data, which stand in unison with this, viz.: the contraction of the uterus, &c., it ratifies and supports the latest conjecture concerning the cause of Parturient Apoplexy (*Eclampsia puerperalis*), viz.: that it is arterial anæmia of the brain. It is obvious how very desirable it would be to obtain opportunities for further investigation, especially in cases of death from the disease; and we should be extremely obliged to any colleagues in the neighbourhood who could help us in this matter.

SCROFULA AND TUBERCULOSIS IN CATTLE.

BY G. GRAY, M.R.C.V.S., BAKEWELL, DERBYSHIRE.

PERHAPS no disorder in the nomenclature of diseases of the bovine tribe deserves more of our attention at the present time than Scrofula. Few authors on cattle pathology have given the

disease more than a passing notice; and, with one or two exceptions, none have touched upon its pathology—a point of great significance to those connected with the carrying out of our sanitary laws, as well as the commonwealth. Why it should have been so neglected by our profession is the more to be wondered at, seeing that the medical profession are not agreed as to the origin of the disease.

I pen the following remarks, not with the view of adding anything new to what is already known with regard to the disease, but simply to chronicle a few facts that have come under my observation. The privileges and advantages often placed within our reach for studying the pathology of the malady, give us opportunities not enjoyed by the medical profession for arriving at the real origin of the disease. Take, for instance, the short space of time required by our subjects to arrive at maturity; indeed, in a period of four or five years an animal may come into existence, arrive at maturity, propagate its kind, and be eventually cut down by the disease. We may have an animal under our eye from the day of its birth until the day of its death; note how it was fed, how it grew and was cared for, and when the first constitutional signs of the disease made their appearance. In a brief space we have the life history of an animal, and the progress of the disease, with its various phases and concomitants, all linked together before our mind's eye, and in such a short period of time as would enable the observant and thoughtful student of medicine to arrive at a more definite conclusion upon the most obscure points of the pathology of this disease. The question as to whether the flesh of animals that are the subjects of this disease is fit for human food is a point not to be so easily settled, and I venture to predict that our senators will soon have to deal with it. As flesh and milk are two staple articles of food in our land, it behoves us to know and to be able to decide whether the milk and flesh of animals that are suffering or have suffered from certain diseases are fit and wholesome articles for human food.

Scrofula has increased very much of late years in nearly all classes of cattle, but more especially in pure bred and dairy stock. By the latter I mean stock on dairy farms only, where they

breed and rear a few heifers, and occasionally a bull, from cows with good dairy qualities, to keep up their stock, etc. We generally find, and, indeed, it is almost a maxim, that where a breeder strives too eagerly after a certain strain, or to gain certain points in breeding, he invariably does so, or may gain his point at a large constitutional expense; in other words, what he may achieve in breeding superior points he will often lose in constitutional stamina. To gain good points and qualities in his stock, he is often tempted to breed-in (from near relatives), or perhaps from an animal with an indifferent constitution, or from one actually suffering from a constitutional disease. Many breeders seem to overlook the great importance of breeding animals with good sound constitutions, as well as form and symmetry.

I have never known a breeder reject animals when suffering from Tuberculosis, so long as they were able to propagate their kind in a marketable form; because he generally disposed of them at an early age and before any signs of the disease had appeared. The disappointments, let alone the losses, experienced by purchasers of pure bred stock, through the indiscretion of breeders, are grievous, and should not be tolerated. Some time ago a case came under my notice, in which a high-bred bull had to be condemned as totally unfit for stud use, owing to this disease assuming a local form which interfered with the act of coition. The animal was accordingly disposed of to a butcher at market value. On being slaughtered, his lungs were found to be full of tubercles.

A year or more after this occurred, I heard the owner's agent deeply regret the loss of the bull, as his stock were coming out uncommonly well, and he thought he might have so far recovered from the disease as to be able to serve a few of their choice cows yearly. However, time proved his stock not to be so good as was at first supposed; for some of them were so far gone with Scrofula before they were many months old, that they had to be disposed of to the butcher to save a dead loss. The breeder of the bull denied that his ancestor had ever suffered from such a disease—a statement which was well known to be not correct in point of fact, and only made to blind the owner.

Breeders strive to keep the existence of the disease secret, if possible, when it has appeared in their herd; whereas, if the truth were put before the public, it would certainly entail a loss to the breeders, but would save the country from much disease. I requested a breeder to furnish me with the pedigrees of certain animals that had succumbed to the disease; he would only grant them on condition that I would not use them in any way publicly.

The worst case of Tuberculosis I ever witnessed in an animal used for stud purposes was in a cow. She had suffered from the disease for years and was much wasted, but, nevertheless, was retained in the stud, until her stock latterly became affected with the disorder when quite young. She was then disposed of to a "slink butcher," and probably palmed off as human food in some of our large towns.

I cite these cases merely to show the unsound principles of some of our fashionable breeders; and so long as they conduct their breeding in such a regardless manner, the disease is not likely to decrease.

Causes.—I have already, in a measure, indicated a salient cause, when commenting on breeders in their eager desire to obtain fine qualities in their stock. The potent causes among pure bred and also dairy stock is in-and-in breeding, and breeding from sires and dams of a strumous diathesis, or from animals suffering from the disease at an advanced stage, a practice which cannot be too strongly condemned. Scrofula may make its appearance at any period of life; young and old are equally liable to its ravages. I believe tubercle may be found in the fœtus at birth, though I have never seen it as early; but I have found it in a calf three months old, and it caused death. I had seen the calf a few times previous to its decease, but did not suspect Scrofula. I looked upon the case as one of indigestion, as it suffered severely from that derangement, with great irregularity of the bowels. I prescribed accordingly, but the creature gradually wasted away and died. I was glad I had the opportunity of making a *post-mortem* examination, as it revealed the mystery. The animal must have suffered a great deal, even at that age; for there were large quantities of

tubercles deposited in the lungs, mediastinum, and liver, with evident traces of peritonitis, as the stomach adhered to several of the adjacent organs.

This unexpected revelation made me inquire carefully into the history of both calf and parents. The calf was a female twin (the other died at birth); the dam was a strong, healthy, cross-bred cow, who was never known to be sick; the sire was a pedigree bull, also healthy—in fact, not a trace of the disease could be found about either sire or dam, and where the calf contracted the malady was a problem yet to solve. The calf had never cohabited with any other animal, but was kept in a pen by itself, with plenty of light and ventilation, and sanitary measures strictly attended to. The idea of its contracting the disease through the milk never occurred to me at the time, nor until I had a letter from Mr. George Fleming in connection with the case I recorded in the January number of THE VETERINARY JOURNAL; and in his letter he called my attention to the milk of diseased animals as a probable cause of communicating the disease. I made further inquiries as to the milk the calf had received. It appears it did not always get its mother's milk, but that from any cow, as it happened. I next examined the cows, and found that not a few of them were suffering from Scrofula. Although the evidence may be considered circumstantial, still, in my opinion, it points rather conclusively to the milk as the cause.

(*To be continued.*)

NOTE BOOK CASES OF RABIES.

BY "CYCLOP."

IN compliance with a request in an Editorial in a recent number of the VETERINARY JOURNAL, I send a few brief notes of all the cases of Rabies which have come under my observation in the county of Durham during the last three years. I regret that in no case has the ascertained previous history of the animal been so accurate or so comprehensive as to indicate satisfactorily the probable time it had been bitten, for I think a

few facts relating to the period of incubation of the disease would prove of as much service as those relating to its prevalence.

Case 1. May [illegible] Black and tan terrier. Died.
" 2. Sept. " Pointer. Poisoned.
" 3. " " Newfoundland. Poisoned.
" 4. Aug. [illegible] Cross Beagle and Hound. Recovered.
" 5. Sept. " Cow. Died.
" 6. Sept. [illegible] Pointer. Poisoned.
" 7. [illegible] " Retriever. Poisoned.

All the above dogs were affected with the variety known as "Dumb Madness," and the symptoms presented by each were very similar and distinctive. In all of them there was a dull, vacant look, a pendulous lower jaw, an emaciated appearance, an occasional restlessness, and a staggering gait. Some of them had great thirst, and were constantly lapping water; but were apparently unable to swallow any. In others a decided change in the voice was remarked. Cases 3 and 4 deserve especial notice, as illustrating the contagious nature of the disease, and its capability of being occasionally cured. Both cases occurred at the same place, an interval of nearly one year elapsing between them, and both animals had been used as watch dogs and had [illegible] in the same kennel. Case 3 was poisoned after four days' [illegible]. Then the owner of the dog was first informed of the [illegible] from which it was suffering, he was incredulous, being [illegible] with some of the popular but erroneous [illegible] as to the complaint. Because the dog obeyed his orders [illegible] to lap water when placed within its reach, he declared [illegible] there was only something the matter with its [illegible] and he refused to have it destroyed. How-[illegible] of the dog, he became convinced of [illegible] of the diagnosis, and had it destroyed. The dog [illegible] as case 4 was purchased a few weeks afterwards, [illegible] constantly chained to the kennel which had been [illegible] No. 3. In the following year a message was sent [illegible] to look at him, as he was affected in [illegible] as the last dog. On examination I found there [illegible] the lower jaw, but very little emaciation. The [illegible] changed, the tongue, throat, and cheeks

showed no trace of injury or swelling. He appeared to have much difficulty in getting anything into his mouth, although there was a free use of the tongue. His appetite was not impaired, for some bread and milk was put before him, and he ate it eagerly; but from the condition of the lower jaw, he was a very long time in emptying the dish. I administered an emetic, and it was arranged to chain him up short, and watch him for a few days. For a fortnight there was no alteration in the symptoms, but he then began slowly to recover. He had an occasional dose of laxative medicine, and a stimulating liniment applied externally to the throat.

I copy the following account of the history, symptoms, and *post-mortem* appearances of the cow from my case book. Sept. 12th, saw Mr. —'s black and white cross-bred cow, and got the following particulars. She had been in his possession about seven weeks, and was seven weeks calved. She had been a good feeder and milker, and was in fair condition. When turned out into the field she would rapidly fill herself, then lie down to ruminate, and if there were any whin bushes would pick at them. She had been "bulling" a few days before she was noticed ill, and was first seen to be amiss on the Friday previous (Sept. 7th), when she was observed to "quid" her hay and bellow strangely at intervals of a few minutes. The bellowing was so loud, that he had heard it on one occasion at a distance of a mile and a half.

During the first few days of her illness she was never seen to lie down: when turned out into the field she appeared to be all right, but perhaps a little wild-looking about the eyes. I was told by a neighbour that she had attacked and killed a strange dog passing through the field. She had also attacked a donkey grazing in the same field, but did not hurt him. She refused all food, and had been drenched with gruel, and kept in a loose box.

Symptoms.—She was lying in a loose box with her head towards the door; the eyes were bright and appeared prominent, the pupils were nearly closed; the nose alternately dry and moist; a little ropy saliva was passing from the angles of the mouth, and the mouth itself was warm and clammy, and of a

normal tint. The tongue was also of a natural colour. She bellowed feebly at intervals,—a strange kind of bellowing, in which the sound was made during inspiration as well as expiration, and it almost seemed as if she was trying to imitate the braying of an ass. A tin of water was put before her, into which she dipped her nose, then upset it. The pulse numbered 40, and was weak; the respirations were also slow. A dog was brought into the box, but it did not excite her. Some gruel was administered to her, but there was difficulty in swallowing; the pharynx appeared to be paralysed. She was left for a short time, and on returning was found standing. She looked thin and very hollow; her hair stood on end, and the skin felt dry, hard, and adhering to the ribs. When moved there was no staggering or crossing of the legs, and she walked strongly. She was milked, and gave about three pints. The milk appeared good, and was given to the dog, which lapped it readily. I may add that the dog continues healthy, although it was fed for several days on her milk. She died on the 14th.

Post-mortem examination twelve hours after death:—Rigor mortis well established. Rumen normal, but appeared rather full for an animal that had eaten very little for a week. Reticulum empty. The leaves of the manyplus were reddened; its contents felt firm, and a portion of them dry and hard. Abomasum natural; small intestines slightly reddened in places, and contained some black fluid. Large intestines normal. Liver, spleen, kidneys, bladder, and uterus were normal; lungs healthy; trachea contained some frothy spume, and the mucous membrane of the larynx and fauces was very dark coloured. The heart was healthy. The right ventricle and the arteries were full of black, firmly coagulated blood. The large veins in the extremities were also full of black blood. The brain was smashed into an indistinguishable mass by an ill-directed blow from an axe while endeavouring to remove it, but a quantity—perhaps four or five ounces—of thin, reddish fluid flowed from the cavity. The membranes covering it were reddened.

EMBOLISMUS.

BY JAMES WEBB, M.R.C.V.S., BISHOP'S STORTFORD (LATE V.S. IN THE ROYAL HORSE ARTILLERY).

ON November 16th of this last hunting season, I was requested by a messenger from H. Sworder, Esq., jun., of Stocking Pelham Hall, Herts, to attend a brown gelding, eighteen years of age, a first-rate hunter, and well-known both in Mr. Gosling's and the Essex hunt, having been the property of the present owner since the horse was four years old.

When I arrived I found the animal lying down in a loose box, evidently in great pain. I watched him for some time, then caused him to rise, when I examined his pulse, respirations, mucous membranes, and took his internal and external temperature; but the only circumstance worth mentioning was, that he rested the off hind leg and appeared very lame upon it. On manipulation, this limb felt deathly cold, while the other legs were quite warm. The horse soon sought the recumbent position again. I now made inquiries about him, and found that he had been that day some distance to the hunting meet, and the owner—a remarkably steady, but resolute rider—informed me that after giving the horse a short gallop, he soon noticed that something was wrong; so was compelled to dismount and lead him home, which was no slight task on account of the excessive lameness, and the sweat poured off the horse, testifying to the pain he was suffering. Upon his arrival in the stable he did not care to eat, which was very unusual; he defæcated and micturated all right. I diagnosed the case as Embolism of the right iliac artery, though I never examined it *per rectum*. I explained the nature of the disease to the owner, and told him that I expected it would be a bother to his horse whenever he hunted him. I rubbed some stimulating liniment into the leg, and afterwards loosely flannel-bandaged it; and to mitigate the pain I gave an *injectio morphiæ c. atrophiæ hypodermicæ* and ordered a bran mash diet. The following day he was somewhat better; and about a week afterwards he appeared perfectly well while in the stable, but as soon as he was exercised a few minutes the symptoms alluded to, viz.: inability to move and intense pain

always manifested themselves. Besides, the near hind leg became affected in the same way, which gave me the impression that both right and left iliac arteries were occluded. I administered alkalies daily for six weeks, with the object of trying to dissolve the fibrinous plugs, and had the horse exercised a few minutes each day ; but the disease showed no signs of amelioration, and as the horse was aged, I persuaded the owner to have him destroyed, to which he consented. Upon making a *post-mortem* examination all was revealed that I had stated, and more too ; for the terminal portion of the posterior aorta, the external and internal iliacs, and a considerable portion of their ramifications were more or less occluded. I took a rough sketch of the vessels (a copy of which I enclose), and a portion I brought away and have placed in spirit.

This horse, I may add, was an extraordinary jumper, and I believe that it is not improbable that during the violent contraction, while leaping, of the powerful muscles in which these arteries are embedded, they became injured, causing arteritis and, as a result, an exudation of fibrin from the walls of the arteries. This fibrin, becoming organised, extended until the vessels were occluded with fibrinous plugs. These plugs were of a dark brown colour, hard, and firmly adherent to the inner coat of the vessels, differing from the yellow *ante-mortem* clots which may be drawn out of the vessels proceeding from the heart of horses that succumb to most chest affections.

EMBOLIC NEPHRITIS AND WORM ANEURISM IN THE HORSE.

(*Concluded from page* 180.)

Remarks on the post-mortem examination. (*Epikrisis.*)

A scientific explanation of the errors in diagnosis is purposely omitted, as beside the mark ; and I now first propose to give an interpretation of the case, founded upon the above matters of fact.

The union of the colon to the bladder is traceable to a circumscribed Peritonitis, due to an extension of the inflammation from the fistulous spermatic cord, and therefore caused by the

operation itself. The history received with the case, viz., "that the horse never regained its former liveliness after the operation," quite accords with this view.

As to the pathological changes in the intestines, I was somewhat doubtful if the nodulated cords were veins or lymphatics. This appearance appeared to me to be due to the valves inside the vessels; but in the cœlic veins no such valves have ever been detected. My view, therefore, for a short time (pending a closer examination) was, that it was probably the lymphatics.

The weak point, however, about this view was to be found in the fact that both the large arteries—but not the corresponding veins—could be detected; and, further, the mesenteric glands were quite normal, and some lymphatic vessels which were prepared showed no disease.

I consequently concluded that these rosary-like cords, which took the same course as the artery, were veins affected with thrombi, and that they acquired this peculiar form from the fact that the coagulum became divided into separate portions, due to strong retraction of its fibrous portions. The space between these portions became partially filled with connective tissue, and these new formations, as well as the organization of separate parts of the thrombus, commenced simultaneously from the walls of the vessels.

Microscopically examined, many round cells were detected between the fibres of the connective tissue. In many of these nodular swellings no dense tissue was present, but, on the contrary, more of a caseous substance, similar to that found in the above-mentioned tumour in the neighbourhood of the anterior mesenteric artery.

I consider this, as well as the sac which was connected with the colon, originally to be thrombosed veins, which had undergone caseous degeneration, and produced extensive new formations and softening processes. The above-described sac (25 centimeters long and broad) must be looked upon as a product of these processes.

I am further of opinion that some of the contents of this sac passed into the cavity of the colon, and that the ingestæ of the colon, in their turn, passed into it.

On the other hand, one might consider the opening in the colon, and the escape of the ingesta between the layers of the cœlic mesentery, as the primary, and the formation of the sac as a secondary consequence; but this extremly doubtful, because, first: it is rather singular that such a rupture should take place in the thickest part of the intestine, where the meso-colon is attached; further, its contents were similar to those of the tumour near the anterior mesenteric artery. Since the connection between this swelling and the nodulated veins could be traced, also that the walls of all these cavities, as already stated, presented the same appearance, we must conclude their origin to be similar. I accept, in support of the preceding discussion, that coagulation took place in the two cœlic veins, due to some doubtful disturbance in the circulation (probably arterial worm-thrombi); and, consequently, these venous thrombi became partly organized, and partly purulently or caseously degenerated. An ulcerated process accompanied these changes, which caused extensive degeneration, and simultaneously led to the formation of the connective tissue by which they became encapsuled.

The above-mentioned sac was formed in the same way, and emptied its caseous contents into the intestine, after destruction of the walls of that viscus. That such patho-anatomical changes must have injured the digestive and assimilative functions of the large intestines requires no further proof.

If we also take the union of the bladder and the colon into consideration, we can easily account for the periodical abdominal pains; for when the intestine was filled with ingesta at this point, it must have caused tension of the bladder, and consequently pain.

The abnormally distended ureter can also be accounted for from the fact that, when the bladder was put on the stretch, its walls must necessarily have been tightened, and would therefore present an obstacle to the flow of urine from the ureter into the bladder.

The repeated appearance of Metastatic Pneumonia is interesting, especially as we were able, during life, to fix the diagnosis with tolerable certainty by means of percussion. We

learn from this, that in animals in poor condition, and with thin thoracic walls, a dull sound is given upon percussion over the seat of Lobular Pneumonia. The point at which the Pneumonia commenced could not be determined at the autopsy.

It is especially remarkable, that almost regularly a day before the appearance of the symptoms of Pneumonia the temperature rose. This is best seen by referring to July 1, 2, 3, and 5, and 6, and particularly on July 7 and 8.

Although we must allow that the discovery which serves as the basis for the foregoing remarks may certainly claim a high interest; yet, considered from a scientific point of view, the explanation of the patho-anatomical change of the urinary apparatus is very unsatisfactory.

With regard to the continual abnormal condition of the urine, one will find an explanation, because especial attention was paid to the *post-mortem* changes of the urinary organs. At first sight the alterations in the kidneys were attributed to embolism, and the heart was searched for thrombus, as this is generally considered the starting point of embolical processes in the kidneys. The aorta was then opened, and the worm-aneurism in the anterior mesenteric artery was seen; yet I was not inclined to attribute this to be the cause of the disease in the kidneys.

I had abandoned the hope of discovering anything satisfactory, and had only the renal arteries to open, when I found a worm-aneurism in both arteries, with thrombi partly degenerated and containing an imprisoned *Strongylus*.

It is quite clear that the thrombi in the renal arteries produced the material for the embolic points in the kidneys, and caused the Embolic Nephritis.

Another question which now presented itself was: Did the albuminuria, and especially the morphological or cell parts of the urine, stand in any relation to the renal emboli?

When emboli are localised, the vessels of the parts are, as a rule, torn; if not, they are always exposed to high blood-pressure, and therefore permit a large quantity of albuminous blood-serum to transude into the renal canals—thus accounting for the albumen in the urine.

The cell elements, on the other hand, one might attribute to

the bladder. I was inclined to this view myself, until I examined the urine contained in the ureters. But seeing that this also had the same elements in it as the urine of the bladder and that voided by the living animal, it became clear that these cells should be considered products of the embolical process, that they were mixed in the urine of the kidney, and must also be a diagnostic sign of this disease.

The horse did not die in consequence of the chronic Colic, but from loss of albuminous matter, due to the disease in the kidney, causing great exhaustion, although the appetite was generally good.

This case has induced me to examine the urine more diligently than I had hitherto done, although I have always paid attention to it.

My experience enables me to communicate the three following cases of affection of the kidneys.

CASE I.—WORM-ANEURISM IN THE AORTA ANTERIOR TO THE ORIGIN OF THE RENAL ARTERIES, AND EMBOLIC NEPHRITIS.

On Nov. 3, 1874, Herr Steinhoff, of Celle, sent for treatment to the Hanover Veterinary School, a horse suffering from ichorous Broncho-Pneumonia, which was declared as incurable.

On examining the urine, albumen and cells were detected. This caused me to beg Director Günther to buy the animal in order to make an autopsy of it; as the gentleman said he should send it to the Zoological Gardens to be killed, after the unfavourable report that I had given him of the case.

My wish was promptly gratified, and this gave me the opportunity of giving the following report of the *post-mortem* examination, which was made the following day.

The posterior aorta, immediately anterior to the origin of the renal arteries, was aneurismally distended, half the enlarged part being calcified; the other half was found to contain a grey degenerating thrombus about the size of a hazel nut, accompanied by a strongle. One of the renal arteries contained a soft red coagulum.

Both renal arteries presented many places, varying in size from a pea to a hazel nut, dark red in colour, and of an irregular

stellate form; also cicatrized contractions, which on one side appeared as greyish-white cords surrounded by dark-red borders, and on the other of a greyish-red condition, the traces of which could in most cases be followed into the substance of the kidney.

CASE II.—WORM-ANEURISM OF BOTH RENAL ARTERIES, ACCOMPANIED WITH EMBOLIC NEPHRITIS.

I examined the urine of a horse on the 7th of December, 1874, immediately after death, and found it to be of an orange colour, flocculent, turbid, filamentous, and alkaline, with a sp. gr. of 1040 at 11° R. (13·7° C.); it was strongly albuminous, and cells could be now and then detected.

Both the renal arteries contained worm-thrombi, in one of which a strongle was found imbedded. These degenerating thrombi were immediately related to a similar thrombus in the posterior aorta, and therefore should be considered as a continuation of it.

CASE III.—WORM-ANEURISM IN THE POSTERIOR AORTA, AT THE POINT WHERE THE ANTERIOR MESENTERIC ARTERY IS GIVEN OFF; WITH EMBOLIC NEPHRITIS.

This horse had (like the one above-mentioned) Pleuritis artificially (metastatically) produced. The urine presented the following characters:—

December 12th, 1874. Reddish-yellow colour, turbid, non-filamentous, alkaline. Sp. gr. 1050 at 5° R. (6·3° C.); it contained crystals of calcium carbonate and oxalate, but not cells.

14th. Dirty yellow, turbid, filamentous, alkaline. Sp. gr. 1048 at 10° R.; albuminous, and a few epithelial cells.

17th. Urine taken from the bladder as soon as possible after bleeding the horse to death:—Yellow, turbid, albuminous, and numerous round and epithelial cells.

Result.—Kidneys resembled those described above. In the renal arteries newly-formed thrombi were found. The posterior aorta was rough, thickened, and fissured in the neighbourhood of the origin of the anterior mesenteric artery, and contained an old and partially-degenerated thrombus.

The two last mentioned horses were very poor and emaciated, although they had had a keen appetite.

In conclusion, the following may be entitled to a fourth place, as it is highly remarkable :—

Herr Haarstick, Department Veterinary Surgeon of Hildesheim, sent a preparation of the left renal artery and posterior aorta, with the following observations :—The *aorta abdominalis* and all its small branches were nearly completely obstructed by a thrombus, which commenced where the anterior mesenteric artery arises, and ended at the external iliac. From the anterior part of the thrombus a tapering projection commenced, which extended as far forwards as the thoracic portion. The right kidney presented the same pathological changes as the left.

The preparation was taken from a six months old foal, which was attacked with acute Rheumatism at the commencement of October, and by the fourth day of its illness a large quantity of a yellow exudate had collected in the anterior chamber of the eye. Within fourteen days the animal became convalescent; there remaining only a slight weakness of the loins, and the pulse remained small and intermittent.

The animal only refused its food about three days before death. It often pawed and looked round towards its flank, and about two hours before death the symptoms of Colic increased, the abdomen became tympanitic, and death closed the scene.

I have only to add that the thrombus in the posterior aorta in places presented many layers, which gradually changed from a white, firm, fibrous condition into first grey, then greyish-red, and finally red layers, each layer also varying in density and consistence.

The left kidney, which was sent, weighed 2,060 grammes (about sixty-nine ounces); it was very much congested and enlarged, and of a soft, in parts pulpy, condition.

Upon cutting it, the surface presented various-sized patches infiltrated with blood, the parenchyma being quite softened, as if destroyed. The glomeruli were raised from the dark red groundwork, as submiliary yellow-grey solid nodules.

The renal arteries were cut open, and the two principal

branches were found to be completely obstructed by greyish-red and tolerably firm thrombi, from which soft coaguli could be traced to the small arteries. The veins were much enlarged, and filled with dark red, soft, but yet coherent masses of blood.

Embolic Nephritis can be recognized by the patho-anatomical changes; but as far as I know, nothing is known of the symptoms and diagnosis of this morbid condition.

With regard to its patho-anatomical characters, the following preparations from horses, and which may be considered to relate to the above disease, are preserved in the pathological collection at the Vienna Veterinary Institute.

No. 1315, Renal abscess. No. 1370, Granular kidney. Nos. 1410 and 2180, Renal metastasis. Nos. 2216, Pyæmic Nephritis. No. 1852, *Aneurism of the renal artery.* No. 340, 341, 805, 2312, 1732, 1583, 1568, 1435, 2401, 2461, 2532, Aneurism of the posterior aorta. No. 2371, Thrombus in the *aorta abdominalis.* Besides, these, Bollinger in his work on Colic in the horse ("Die Kolik der Pferde," &c.), says that out of 168 aneurisms affecting 100 horses, three were found to attack the renal artery.

Bruckmüller, to whose diligence the valuable patho-anatomical collection at Vienna is due, mentions in his "Lehrbuch der Pathologischen Zootomie," p. 645, that the thrombi formations (*Pfropfbildung*) in the renal artery are usually accompanied by purulent infiltrations of the kidney. But he does not point out that this thrombus formation is essentially the cause of the renal affection.

There is a striking resemblance between the last case described in this paper and that described by Bruckmüller, pp. 643, 644, under the title of Nephritis.

Bruckmüller says that this Nephritis is accompanied by rheumatic inflammation of the muscles of the posterior part of the body. In our case, the animal suffered from Acute Rheumatism, which was followed by weakness in the loins.

It must also be granted that Haubner's "Nephritis" and "Spinitis" (*Nieren und Ruckenmarks Entzündung*) undoubtedly admit of a close comparison with our case.

As our knowledge of the vascular system increases, so many descriptions of such diseases, which had the appearance of truth, become obsolete, owing to the unsoundness of their physiological basis.

Bruckmüller describes (at p. 648) the first stages of the embolic centres tolerably accurately. He says, with truth, that renal metastasis in horses is most frequent after pneumonic metastasis, and that it is caused by ichorous Pneumonia, Endocarditis, and thrombi in the posterior aorta. Talking of the course of these metastasis, he says:—It is seldom that the products of inflammation become dessicated, become caseous, and form white or yellow nodules; but that more frequently a large abscess is formed, filled with a yellow pus, over which the renal capsule thickens.

He says nothing of the formation of embolic cicatrices, which doubtless are the most frequent result of Embolic Nephritis, or renal metastasis—which are one and the same thing.

He has, however, partly described the embolic cicatrix very well, under the head of Granular Kidney (*Nieren-granulation*), at p. 646, but says it is the second stage, or the higher development of chronic Nephritis.

At present I know of no other chronic Nephritis than that caused by metastasis, which leads either to embolic cicatrices or to the formation of purulent abscess, or, perhaps, to ichorous cavities.

According to my apprehension, the six forms of Nephritis which are described by Bruckmüller, viz.:—

(*a*) Acute Nephritis (which resembles that described as the 4th case in this paper);

(*b*) Purulent infiltration of the kidney;

(*c*) Chronic Nephritis;

(*d*) Renal granulation;

(*e*) Renal abscess;

(*f*) Renal metastasis;

may all be said primarily to take their origin from vessels which were affected with thrombus or embolism.

Klebs writes very beautifully and appropriately in his "Handbuch der pathologischen Anatomie," p. 649, upon Embolic Ne-

phritis, and particularly on renal infarct, which he also terms "Nephritis-embolica-arterialis," in contradistinction to a disease which was first described by Virchow and Beckmann, under the name of "Capillary Embolism of the Kidney," in man.

The processes described by Klebs I am quite willing to accept, from the fact that the same processes occurred in the cases above described, and therefore I refer the reader to the chapter on this subject in the handbook above mentioned.

It has been known for a long time that the kidneys are a favourite organ for the deposition of emboli. Renal emboli owe their origin to the processes arising from thrombi in the pulmonary veins, left side of heart, and posterior aorta, as far as the origin of the renal arteries. We also know that, besides the kidneys, the spleen is in like manner often affected with infarcts. If we simultaneously find emboli in the spleen as well as in the kidneys, we may with the greatest confidence conclude that their primary seat was anterior to the origin of the *arteria cœliaca;* if, on the other hand, metastatic emboli are absent in the spleen, although present in the kidneys, we may conclude that the thrombus was situated in some part of the aorta posterior to the cœliac artery, or in the renal arteries themselves; for in this part of the aorta the anterior mesenteric artery, which is the favourite seat for Worm-aneurism, takes its rise; and, as we have seen above, the walls of the aorta and the renal arteries often partake in the process; and when we find isolated centres of embolism in the kidneys, we may presume, with tolerable correctness, that its origin was Worm-thrombus, situated either in the *aorta abdominalis* or renal arteries.

As for the symptomatology of metastastic Nephritis, nothing is known. In human medicine as little is known as to the diagnosis of this disease.

Niemeyer says in his manual (*Lehrbuch:* 8. Auflag, 2. Band, s. 36), that the metastatic form of interstitial Nephritis is generally overlooked during life, for there is no characteristic symptom by which it may be detected.

Vogel also says in his work on diseases of the kidney, published in Virchow's *Handbuch der speciellen Pathologie und Therapie:* vi. Band, ii. Abtheilung, s. 675, that in pyæmic

Nephritis no characteristic change in the urine is to be observed. He also says that the urine sometimes contains albumen, but never in large quantities. At other times it is only temporarily present, and in others it is quite absent. It may seldom contain cylinders or blood. Sometimes the urine is scanty, and in new cases there is no secretion at all. In some cases there is pain in the region of the kidneys; in others it is wanting.

From this it may be inferred that there are no trustworthy symptoms on which the diagnosis of metastatic Nephritis in man can be based; hence it happens the renal affections in the human subject play a subordinate part in medical literature to those caused by pyæmia. It is quite different in the case of the horse.

It appears to me that these metastatic inflammations of the kidney in the horse are of the greatest practical importance, because their frequency is in direct proportion to that of Worm-aneurism; and because, also, according to all the cases I have hitherto observed, they often cause much derangement of the digestive organs, and even death. Accordingly, cases of Embolic Nephritis may occur without being accompanied by general pyæmic processes, as is the rule in the human subject.

As regards the symptoms in the horse, I have neither found uriniferous cylinders nor blood, but albumen, and round and epithelial cells. From these facts I consider that we shall be justified in assuming that these symptoms are diagnostic of Embolic Nephritis in the horse, until further examination proves the contrary.

This diagnosis is supported by the fact, that up to the present, so far as I am aware, we have no scientific evidence of the existence of Bright's disease—diffused parenchymatous Nephritis—in the horse. I particularly wish it to be understood that I do not say that Bright's disease does not occur in horses, but that, as far as my knowledge is concerned, no proof of its occurrence has been hitherto offered.

From what we know of the patho-anatomical changes of Embolic Nephritis, we are certain that it may be either of a transitory or a chronic character, depending upon the nature of the thrombus processes in the vessels, *i.e.*, whether they run their course

rapidly or are of a permanent nature. In the first case, the Nephritis would be without effect, and followed by recovery; on the other hand, the second condition would lead to loss of albuminous matter and disturbances in the assimilative processes. I found that all four of the cases above described wasted to skeletons, although two of them had a good appetite during their illness.

The prognosis is, therefore, uncertain, and dependent upon the course of the disease.

From the foregoing it will be seen that dangerous and violent diseases of the vessels, as well as mild transitory formations of thrombi, can cause this form of Nephritis.

The circumstance that in a large number of cases this Nephritis, as well as Embolic Colic, have the same cause, viz., Worm-thrombi, leads me to the following conclusions:—It is a known fact that the urine often contains albumen in patients suffering from Colic, and as an explanation of this, it has always been said that it was due to an abnormal stasis of the blood in the renal vessels. I have often found round and epithelial cells in the urine, as well as albumen; and I am of opinion that in many cases of Embolic Colic we also have Embolic Nephritis going on at the same time, and that the presence of the last is an aid to the diagnosis of the first. The logical correctness of this conclusion cannot be disputed; but, whether it will be proved correct in fact, future experience must determine.

The treatment of Embolic Nephritis is undoubtedly to be based on those means which prevent the formation and check the organization and consolidation of thrombi, and those which favour their disintegration.

It is evident that an equable and low blood-pressure is favourable to the adherence of thrombi to the walls of the vessel; but a rapid circulation, with high blood-pressure, is more likely to carry portions of the thrombus away in the current, and thereby favour the processes of embolism. Hence, since movement (exercise) increases the circulation, it would be advisable to keep the patient as quiet as possible.

As far as the administration of medicine is concerned, in some cases I have used tannin, yet I have not arrived at any satisfactory conclusion as to its action.

In conclusion, I may remark that I have to-day, and for some days past, found fatty metamorphosed fibrin-cylinders in the urine of a horse which Director Günther has had the kindness to purchase for the Institute, in order that I may be able to extend my examinations, and I shall not fail to communicate the results to my readers at some future period.

Editorial.

VETERINARY SCIENCE IN THE UNITED STATES.

It is somewhat strange that the Americans should have so greatly neglected Veterinary Science, and that in this respect they should have so closely followed the example set them by this country, seeing, as they must have done, the terrible destruction preventable animal diseases had brought upon our flocks and herds, owing to our own utter indifference, and also the fact that we had been instrumental in conveying some of these scourges to nearly every part of the world, where their ravages have been even more serious than here. America must have seen and known all this; nay, she was conscious that at least one of these maladies had been carried from us into her own cowsheds and pastures, and was smouldering and slowly spreading there, only waiting the opportunity to blaze rapidly over every State. Not only this, but every year other animal plagues—either exotic or native—were becoming more serious and widespread, and one of them alone—Swine Plague—threatens to destroy her porcine tribe; while another, Trichinosis, is not only assuming alarming proportions, and menacing the health of her own human population, but will eventually lead to a considerable diminution in, if not to an entire suppression of, her large export trade in swine flesh.

The existence of such diseases as Glanders among her horses will also doubtless tend to injure her trade in these animals—very many of which are sent to Europe every year; and as they are received chiefly because they are cheaper than the ordinary run of horses in this country, they are the more likely, as these horses are, to be infected. If the reports are true as to the condition of her cowsheds, even in the chief cities of the States, and if Tuberculosis be as rife among the cows as is represented, not only must her own populations be exposed to great peril, but so must those who consume the products of these animals on this side of the Atlantic—peril which will soon be recognised, and must lead to a refusal of these products.

Already, and for the first time, America has begun to experience in an unmistakable manner what it is to neglect the teachings of Veterinary Sanitary Science; and though it took this country thirty years to learn the lesson—chiefly because there was no one to point it out to her—yet we can scarcely doubt that the United States Government will not

be so slow to learn, now that a most important branch of trade is so seriously checked by unpardonable indifference to the recognition of a science, the utility of which has long been justly estimated on the Continent, and is beginning to be felt among ourselves—almost the last to acknowledge it.

We have frequently stated that the Anglo-Saxon race has been slow to recognise this Science, and the proofs in favour of our assertion are numerous. It has no home among us even now, notwithstanding the terrible disasters our indifference to it has inflicted upon us, and will still entail; and in the meanest and smallest of the European States it holds a higher position than it does in Britain. We need not allude to the causes for this—they are not far to seek.

In America we should certainly have expected something better than at present holds. She had the painful experience and the bitter lessons of this country before her, and she has shown that in other matters she could profit by such example. Not only this, but from among the small number of excellent Veterinarians she possesses, warning voices have been earnestly raised on her behalf, and the danger she was incurring has been indicated in prophetic words which have already been proved to be only too true. To select one instance out of many, we may note what Veterinary Surgeon Cressy has written in his "Fourth Annual Report on the Diseases of Domestic Animals in Connecticut," published in 1875, and which now lies before us:—"The increase and sudden invasions of disease among our stock of late years should awaken new zeal in every farmer, and also admonish the whole people of the necessity of having a vigilant commission in every State, and authorized to act in every emergency. There should be no curtailing of its power. Its action should be final in every case and under all existing circumstances. The public must first be served. Its demands are absolute, and in the well-being of the greatest number the rights of individuals should never interfere. The want of such an organized force has cost this country thousands of dollars on every occasion. In 1860, Massachussets suffered in an extreme degree for want of competent authority at the commencement of the attack the year previous, to decide the nature of that contagious pestilence which afterwards proved to be the dreaded Pleuropneumonia late from its native haunts in Holland. This fresh and unexpected outbreak of the Lung Plague forcibly illustrates the great liability of its recurrence in almost any portion of the United States, from the importation of foreign stock at the present time. And so long as our coast is allowed to remain exposed to the commerce of the world without a veterinary surgeon at every port, it is purely a matter of chance whether or not we suffer from the malignant diseases of other lands." In this excellent report we have also a good description of an outbreak of Lung Plague, the contagion of which was imported from New York to Connecticut the previous summer.

With all this experience and all this evidence, the United States will surely now give some attention to Veterinary Science. At present the States are the very paradise of quacks and impostors of every kind, and nothing is done by the Government to encourage the study of animal

medicine by competent, well-educated men. Such neglect is not only something of a national disgrace, it must lead—as it has so often led in this country—to national disaster, not once, but many times.

With her enterprise, her well-known advanced views as to education and general science, and the high position human medicine is already assuming in the States, it would indeed be a matter for serious regret and censure if the American Government longer delayed establishing well-organized veterinary schools, and fostering a science which none but governments utterly blind to their own material interests now ignore. With her immense and rapidly increasing animal wealth, so necessary for her present and future progress, it is quite unaccountable that America should quite neglect the science that alone can protect and enhance that wealth. Besides, the claims of animals to protection from disease, pain, and mismanagement should surely weigh for something with a people so distinguished for their humanity! These claims come well within the purview of Veterinary Science.

A NEW VEGETABLE PARASITE CAUSING DISEASE IN CATTLE.

IN the "Notes and News" which appeared in the VETERINARY JOURNAL for January last, allusion was made to Sarcoma in oxen, and the opinion given by the veterinary professor, Perroncito, of Turin, with regard to the presence of a vegetable parasite in that malady. In publishing that note, we forgot that we had not referred to the valuable contribution to veterinary science upon which Perroncito's remarks were founded. We now gladly do so, and ask our readers to consider the Turinese professor's criticisms as an appendix to what we state.

In the *Centralblatt für die Med. Wissenschaften* for 1877 (No. 27), and the *Deutsche Zeitschrift für Thiermedicin* for the same year, Professor Bollinger, of the Munich Veterinary School, under the heading "Ueber eine neue Pilzkrankheit beim Rinde" ("On a New Fungus Disease in Cattle"), draws attention to a disease which occurs in the upper and lower jaws of bovines, commencing towards the alveolæ of the posterior molars or in the spongy texture of the bones, and extending to the soft tissues. The disease essentially consists in a new formation or neoplasm, which produces osteoporosis in the interior of the bone, and externally hyperostosis; finally involving the gums, cheeks, tongue, and other soft textures, and giving rise to swellings, abscesses, and caries, with general loss of condition, until at length the cattle die either of emaciation and debility, or have to be slaughtered.

The disease is greatly dreaded by graziers, who give it several significant names; while among veterinarians it has received such technical designations as "Osteosarcoma," "Spina Ventosa," "Bone Tuberculosis," "Chronic Ostitis," "Cancer of Bone," etc.

It usually forms swellings on or in the tongue, and these result in erosions of the mucous membrane, and partial atrophy of the muscles, until at last the organ swells to a great size, and assumes a perfectly wood-like hardness. The lymphatic glands of the tongue and upper part of the neck, throat, larynx, and mucous membrane of the stomach are likewise implicated at a later period. The swellings are about the size of a walnut or an egg, soft in consistence, of a dull yellow colour, and juicy exterior.

All this serious disturbance is produced by a fungus allied in many respects to the common green mould *(Penicillium glaucum)* which grows on jam, paste, damp leather, etc., and therefore very far from being one of the lowest of the group to which it belongs. The individual plant consists of a conical mass of branched filaments, springing from a single cell, and bearing on their short terminal branchlets the spores, or *Conidia*, by which the mould is reproduced. Often a number of these plants are united together in the form of a mulberry-like mass, visible to the naked eye as a minute granule of a dirty white colour. Hars has given the name of *Actinomyces bovis* to this mould, and the disease to which it gives rise is hence designated by Bollinger *Actinomykosis*. His observations are not altogether satisfactory, inasmuch as they are not complete; for all his attempts at artificial culture of *Actinomyces* entirely failed, as did also efforts to inoculate a calf's tongue with fluids containing the fungus. And as we reported in No. 1 of the journal for this year (p. 60), Professor Perroncito, of the Turin Veterinary School, while agreeing with Bollinger as to the frequent occurrence of the fungus in question, yet entertains serious doubts as to whether it is really the active cause of the disease in cattle; basing his reasons for doubting on the following facts: (1) Because Sarcomata are frequently met with in which *Actinomyces bovis* cannot be found; (2) On the presence of ulcers and fistulous tracts opening exteriorly, or communicating with natural cavities, which can thus be put in communication with the external air; and (3) On the negative results that have attended the inoculation of animals with fresh matter containing the fungus which is supposed to give rise to the disease.

THE HORSE-SICKNESS OF SOUTH AFRICA.

As everything relating to affairs in South Africa is now receiving the closest attention, possessing, as they do at present, the greatest importance in the history of our Colonial empire, no apology is needed for again alluding to the very grave malady known all over that portion of the African Continent as the Horse-sickness, and which so seriously threatens the material prosperity of part of the world. We are more especially induced to refer to it again, from the circumstance that the troops recently sent with their horses from this country will arrive towards the end of the season during which it is most prevalent, and may consequently suffer loss from its ravages at a critical period.

Letters lately received show that it is as widespread and fatal as usual. One correspondent at Algoa Bay, in a letter dated January 31st, writes:—"I am sorry to say that Horse-sickness is prevalent in parts of the colony, one miner at Kimberley having lost twenty animals in a week recently. The secret of this fatal disease still baffles veterinary science, and the victims rapidly succumb to its attacks." Notwithstanding all the evidence we are able to gather concerning it, we are yet far from being satisfied as to its nature or etiology. We hope, however, to be in supplied—before long—with abundant materials for elucidating the obscure points with regard to it. One question in connection with its etiology we should like answered, and that is whether during the "Horse-sickness" season other animals—as cattle and sheep—suffer from anthracic disorders; which we should suppose to be the case if this horse disease is Anthrax.

The authorities from which we are about to quote are the most recent who have commented on the malady: the first being Mr, Aylward, Commandant of the Transvaal Republic, and late Captain of the Lydenberg Volunteers,

who has just written a work entitled "The Transvaal of To-day;" and from it we make the following extracts.

Speaking of the Transvaal as a grazing country, Captain Aylward writes (page 166):—

"Herds, except under the most favourable circumstances do not seem to increase in anything like a fair ratio. The stocks of most farmers, apart from wars and other exceptional causes, have not permanently yielded even the natural increase—much less that which might have been expected in a country which has not been subject to the desolating droughts that have so frequently decimated the herds of the other colonies. I have asked the question point-blank of many farmers, 'What increase have you to show in your breeding-cattle for the last ten years?' The answer has almost invariably been, 'No increase.' This is generally attributed to 'calf-sickness' and 'lung-sickness,' which has proved fatal to seven out of ten of the breeding-cattle and young ones, on an average of years in most districts.

"Only the better portions of the Highveld are free all the year round from 'Horse-sickness.' With the exception of New Scotland and Wakkerstroom, the Transvaal is not in any sense a horse-breeding country, and the horses bred in these districts, it must always be remembered, are as liable to perish of the disease called 'Horse-sickness,' when they are exposed to its influence in the Bushveld and low-lying divisions, as if they were foreign or imported stock. Sheep can hardly as yet be said to have had a fair trial, it being only within recent years that the value of the Highveld, as a sheep-walk, has revealed itself.

"I have consulted a friend—Mr. Cornelius Van der Berg, residing near Standerton, on the subject. He, with a number of relatives and friends, migrated from the County Weenen in Natal, to the Transvaal Highveld, in the beginning of the winter of 1870. He himself became the purchaser of two farms, one pasture, and the other a winter farm of considerable extent on the Pongola river. These he stocked with 170 head of cattle, 17 breeding mares, and 750 ewes, all in good condition. He had also with him a considerable number of Angora goats. The result of his settlement is that he has lost 30 per cent. of the cattle, all the horses, all the goats, but gained in eight years 45 per cent. on sheep. The experience of all those who accompanied him is, with one exception, nearly similar."

At page 220, Captain Aylward writes:—"There is in Africa, and especially in the Transvaal, a close season, when the penalty for descending into the Bushveld in search of large game, or of penetrating to the north, into the remoter grounds of the elephant-hunter, is not a fine of five or ten pounds, but the almost certain exposure of the traveller to fever and death. This season may generally be said to include the latter half of the spring, the whole of the summer, and not only the whole of the autumn, but also a few of the first days of winter. This sickly and dangerous season includes from the 1st of September to the 25th of May in nearly every year. It is in the Bushveld and low country not only a period of general unhealthiness and danger to man, but is also that during which the constant prevalence of 'Horse-sickness' adds to the danger, expense, and difficulty of the hunter. During, on the other hand, the whole of the actual winter, but little fear of either fever or 'Horse-sickness' need be entertained anywhere, save in the less distant, and less shot-over districts north of the Limpopo, of which I know nothing but from hearsay."

Describing certain rules laid down for the guidance of a number of gentlemen who arrived in Pretoria in December, 1877, and referring to "Horse-sickness" (page 221), the author states: "They were told, at the same time, that unless they purchased what are called 'salted horses,' that is, animals which had recovered from the disease known by the very vague and general

term of 'Horse-sickness,' but which is really a fever whose principal symptom seems to be violent Pleuritis, they might find themselves at any time deprived, from this cause, of their animals.

"To guard against this sickness—as they did *not* buy salted cattle—they were recommended never to permit their horses to bite grass or drink water, until the morning mists, haze, or miasma, with which the low grounds are frequently covered, should have been first entirely dissipated, leaving the field dry. The horses, consequently, should be fed at night, and only allowed to graze at will during the later and warmer parts of each day. This will best be effected by the English sportsman bringing proper nose-bags and head-stalls with him, by the use of which, with great care and attention, I have seen delicate and valuable animals preserved where there were no stables, during very bad seasons. It is the general opinion that the poison causing the fever is to be found in the dew. It is certain that horses eating dew-wet grasses during the sickly season, invariably die. This is so firmly believed, that I have known both Dutchmen and Englishmen to wash carefully every blade of grass or sheaf of oats coming from the damp air, before it was admitted into their stables; and I must certainly say that this safeguard has been followed by good results.

"That there is something in the dew or miasma theory can be readily gathered from this fact: 'imported horses,' when properly stabled, and not allowed out except during the later and warmer hours of the day, seem very frequently to escape the disease altogether; but to an imported animal so kept, one single night's absence from shelter during the unhealthy time will always prove fatal. So much for 'unsalted horses.' With regard to the 'salted ones,' or those presumed to have passed through the sickness, I can speak with considerable certainty, as I have had in my charge at various times large troops of these animals, amongst which were some of great value. Of those bought by myself I shall first speak. They were five in number, and are all still alive, having, under circumstances of most aggravated toil and exposure, passed through the two worst seasons for horses ever known in the Transvaal, and to aggravate the case, in the worst and most unhealthy districts inhabited by Europeans. They were 'Peter,' 'Beaufort,' two 'Charleys,' and a mare who was called 'Mrs. Y.' for political reasons. The first-named animal cost seventy-eight guineas, was a young gelding, barely fourteen hands high, and was bought from Mr. Crane, of Lydenberg, with a character. He had been foaled in Natal, in his third year got the 'sickness,' and was left for dead by the Umsindusi, near Maritzburg. To his owner's astonishment, he afterwards turned up alive, but in wretched condition, having lost all the hair off his back, neck, face, and ears, and being the most unearthly-looking and forlorn wretch imaginable. In this condition Mr. James, of Reedspruit, bought him for £3, and put enough meat on him to enable him to work up easily in a trap to the gold-fields. He then fell into Crane's hands for £15, had 'sickness' again in the Transvaal form, and on recovering was again put in condition, and sold in October, 1876, to Captain Schlieckmann for service at Fort Burgers, where there were no stables—the most unhealthy and poisonous spot for animals in all Africa.

"There, and in the surrounding country, he was worked day and night without food, except what he picked up, until he was returned, early in December, a mere bag of bones, to Mr. Crane. The unfortunate animal was again fattened up and sold to me. I used him constantly in the lower Origstadt valley, in Secocoeni's country, and in every unhealthy place that duty led to, all through the sickly season, during which period no less than 86 of his companions died.

"In the next bad season, after various night journeys, I left him in Pretoria, where the sickness nearly dismounted the Carrington Horse. He again

travelled—of course day and night—to Lydenberg, where sickness lasted till he was sold on the 8th of June last for £50. He is still alive and well, and valued at 100 guineas, after having travelled during my ownership of him, in peace and war, nearly 3,000 miles, sometimes being as much as nineteen hours without having the saddle for one moment off his back.

"The second horse 'Beaufort' was bought with a guarantee from Matcham Coetza, of Nazareth, for £65. He had a relapse of the worst form of 'Horse-sickness' in the Bushveld in December, 1876; but being 'salted,' recovered with simple treatment, consisting mainly of bleeding in the dividing membrane of the nostril. He served through both campaigns, and is still a Government troop-horse, having seen the death of every horse brought with him that was not guaranteed as over the sickness. Charley No. 1. was obtained from Commandant Coetza of the Crocodile valley, has done similar duties through two seasons, and is still on service.

"The other Charley was bought at Henwood's store, for £40, in February, 1877, and has never been in a stable since, except as a casual visitor. His master has ridden him enormous distances, day and night, through the worst parts of the same districts, and ties him up to a tree in his garden at night in all weathers. The mare was a 'Coetza,' a purchase from the Dutch. She is alive and well, after somewhat similar experiences; but, strange to say, her foal, which she got to a salted stallion, died of 'Horse-sickness,' when running with the mother at six months old.

"Amongst the troop-horses supplied to me by Government, all those which had not been 'guaranteed' as 'salted' by some respectable and responsible man, whether Dutch or English, died as soon as they were brought into contact with the fever. Those only that bore unmistakable marks of having had the sickness, survived to be given over to the new authorities.

"I need add nothing in the way of opinion to this illustration. Those who go to South Africa may do as they like: but for my part, I should prefer giving 100 guineas for a 'salted' hunter, to accepting, even as a present for use in the Bushveld, three equally 'unsalted' horses. Good animals, guaranteed, but slow, used to being shot over, can always be obtained at from £35 to £50; but fast, lively, spirited, and trained, 'salted,' shooting horses, are worth from £70 to £150, and no price can be too high for some of the good, clever, and faithful creatures I have known. The best horses are those with black points—even a dark stripe running from the mane to the tail in a beast of any colour, is a sure sign of endurance."

At page 248, Captain Aylward, again referring to the subject of Cape horses says:—

"It must be remembered that winter, and winter only, is, in South Africa, everywhere healthy for men and horses. With regard to these latter animals, I shall now venture to give a few useful hints, which I hope will serve somebody as well as they have served me. Horses that have never been shod, if used to Kafirland, or coming from very mountainous districts—unless broken down about the feet, when they are useless—should never see the blacksmith; but animals from the flat must have their feet nicely prepared, and be thoroughly well shod by a reliable hand, before being taken north or east of the Lydenberg districts. If a horse is tender-footed, and inclined to shrink from stony places, and sharp-pointed gravel, he is practically useless. After the feet, the mouth is of most importance. Nearly all the African horses I have seen are subject to an inflammation of the palate, causing the lower bar to grow down over the teeth, by which the animal is prevented from masticating hard food, and from crushing or grinding maize, or mealies especially. This will at once be detected by his dribbling his corn about in all directions, instead of swallowing it after he has taken a sufficient quantity into his mouth. This is called 'Lampers' or the 'Lampreys,' and

is only to be cured by the overgrowth being carefully burned out by a red-hot iron. This inflicts no pain upon the horse, that is to say, unless it is carried too far. Some people cut and slash the projecting bars with a knife or lancet. The irritation is just as great as if burning were resorted to, but the relief is not so permanent. This whole matter may seem trivial, but if it is not attended to a horse will get off his feed, rejecting even the harder natural grasses, and will speedily lose strength and courage."

The next authority is Captain Gillmore, who travelled through Natal, the Orange Free State, and Transvaal, and has given the result of his journey in a work entitled "The Great Thirst Land." He writes :—

"North of the Vaal river, particularly on the banks of the Limpopo and in many of the regions beyond, Horse-sickness prevails to a frightful extent. I have known one hundred horses from the Free State driven to Bamanwatto, with the hope that five or six would 'salt,' but all died. The consequence of this is, that a horse worth about £6 in the Free State will fetch from £100 to £120 among the Bechuanas, and £150 in the Matabele country. The season when this epidemic rages is from December to June; but, strange to say, if an animal once gets the disease, and recovers, it never has it again. A horse is then called 'salted,' the expression being of Boer origin. I also learned from Mr. Mackenzie, the missionary at Soshong, that the progeny of a salted stallion and a salted mare suffered less, or were less likely to die from the disease, than animals imported from other regions. Again, if the foal should have two generations of salted ancestors, it will have the complaint in a very mitigated form. Instances are occasionally known of horses not having the sickness the first year, but that gives no assurance they will not have it the second ; in fact, the life of no horse that does not salt is safe during the months already mentioned.

"When a horse takes the sickness, or at least shows indications of it, thirty-six hours will terminate the matter one way or the other; if the unfortunate animal is alive after that, experienced persons would pronounce an opinion, or express a hope, that the creature was going to 'salt.' When such is the case, the animal must not be worked for many months, but must receive superior food, and be blanketed or housed at night. As a rule, horses that are salted are easily known, for their coats stare in large flea-bite marks, especially about the neck and withers, and on the flanks. Between the jaw-bones, close up to the windpipe, there is a large perceptible swelling, the eye loses its lustre, and the creature evinces a disinclination to violent exercise. A salted horse is thus always sluggish and careless, and must be ridden on a sharp bit and with severe spurs. What causes horses to be so much valued in the countries so fatal to them is, that nowadays, since fire-arms are comparatively common in the interior, elephants have become so wary and savage that stalking them on foot is extremely dangerous and arduous; whereas, if you have a good horse, they are easily overtaken, and their attacks avoided.

"I have been at the death of many horses that died of horse-sickness. The symptoms in each case with the same : a dull, lustreless eye, with great puffiness over the pupil ; a staring coat, extreme restlessness, lying down one moment and getting up the next ; a marked desire to be in the society of its master, at all events close to the wagons ; griping, coughing, and ultimately death ; and in the last struggle—the very last, I may say—an immense quantity of a white frothy substance comes from either nostril, covering the ground in front of the mouth for the distance of one and sometimes two feet. The pain the poor creatures suffer while ill with this epidemic is fearful, and their groans can be heard for several hundred yards, if the atmosphere is still. I do not profess to a knowledge of anatomy, but in all

carcases that I have opened, the entire liver, lungs, and heart denoted acute inflammation, while the last organ was soft and flabby.

"Many, and myself among the number, cannot help thinking that this disease is caused by some vegetable matter, not procurable at other seasons of the year. Mr. Thomson, of the Backwan, concurred with me, while Mr. Mackenzie and Mr. Hepburn thought differently. Inoculation has been recommended, but, I fear, not sufficiently adopted. Mr. Hobson, a very large and successful breeder in the Eastern Province of the colony, had many discussions with me on the subject, and expressed great faith in it. Horse-sickness is known in other parts of the country than those mentioned by me, but not with equal virulence."

A correspondent to the *Field* of February 22, alludes to the "Tsetse"-fly, and this Horse-sickness. Of the former he writes:—"The Tsetse-fly, the dread of all travellers in the interior, is, as I know, invariably fatal to all domestic animals, man alone being unaffected by its bite; but the obstacle which it is said to offer to the colonization of the Northern Transvaal and other parts of South Africa is merely a temporary one, for, like the large game, in whose proximity it is always found, it has gradually retreated before the march of civilization. It may, in South Africa, be broadly said to be now confined to the valley of the Limpopo river along its whole course, while towards the sea it extends southward into the Amatonga country, east of the Lobombo Mountains. At no part is it found much, if at all, south of the northern end of St. Lucia Lake, and it will thus be seen that it does not exist in that part of Zululand in which our operations will be carried on.

"The same, however, cannot be said of that equally great South African scourge, the 'Horse-sickness.' Sporadic in the Free State and other parts, it is endemic in Zululand and the latitudes north of Pretoria, and has baffled every Veterinarian who has as yet been brought into contact with it. Its unknown origin, its varying symptoms, its uncertain pathology are expressed by the very vagueness of its name—the 'Paard-ziekte' of the Dutch Boers, the 'Horse-sickness' of colonists. Prevalent in the rainy season more especially, various causes have been assigned for its origin, such as malarious exhalation, feeding in the early morning on grass wet with heavy dew, chill from the great radiation from the earth's surface at night, etc.; but it has been found that stabled horses, kept entirely on 'forage' or corn, though, perhaps, not so liable to it, are, nevertheless, by no means exempt. Its onset is at times very sudden, and many a hunter has started from camp in the morning, only to return footsore and encumbered with his saddle at night. At times, the disease appears chiefly to affect the lungs, and a constant cough is the chief symptom; whilst at others. there is considerable swelling of the head, with the exudation of a green froth from the mouth, the 'Dikkop-ziekte' of the Dutch, who regard the latter symptom as a regurgitation. But be the symptoms what they may, the result is almost invariably the same, and death ensues in about ninety-eight out of every hundred cases. The *post-mortem* appearances afford as little clue as do the symptoms. In some cases inflammatory consolidation of the lungs, partial or lobar, is found; in others, the liver is enlarged and pale, while perforation of the stomach is said to be not uncommon. It is possible, however, that the latter may be only a *post-mortem* phenomenon. The horses that recover —an average of 1·2 per cent., as has been already mentioned—are known as 'gezout,' or 'salted' horses, and are extremely valuable, especially in those districts in which the disease is endemic; so much so that, irrespective almost of individual merit, they will command from £100 to £120, and are by no means always easily obtainable even at that price."

Reviews.

A GUIDE TO TRAINING AND HORSE MANAGEMENT IN INDIA. By Captain M. Horace Hayes, Bengal Staff Corps. Second Edition. London: Thacker & Co., 1879.

We entertain a very high opinion of Captain Hayes' book on Horse Training and Management in India, and are of opinion that no better guide could be placed in the hands of either amateur horseman or veterinary surgeon newly arrived in that important division of our empire. We had not the opportunity of seeing the first edition, but from a careful perusal of the present it appears to contain everything pertaining to training and managing horses. The author proves himself to be not only well informed theoretically and practically, as to preparing horses for racing in that hot climate, as well to their equipment and handling for ordinary work, but he also shows that he is possessed of no mean amount of that knowledge which is derived from the study of veterinary medicine. His remarks on shoeing are most judicious and sensible, and if his recommendations were adopted and carried into effect, the pernicious farriery of the native shoeing-smiths would be replaced by a method which would greatly benefit horses and their owners.

Of the value of horses bred in this country to do service in the East we have rather discouraging testimony. "There is a sort of fatality about English horses in India, for few indeed out of the many that are imported prove, either as racers or ordinary riding horses, to be worth their passage-money out to this country. Their feet and legs generally go to pieces on our hard ground."

Everything relating to racing in India and the rules of the turf in that country is embodied in Captain Hayes' book, and not the least valuable portion of it is the Hindustanee vocabulary, containing vernacular terms referring to all matters relating to the horse, as well as diseases, medicine, etc. This alone should make the guide valuable to the young veterinary surgeon, who finds himself compelled to pick up, as best he can, the rudiments of a strange language when he commences his tour of professional duty.

A MANUAL OF PRACTICAL CHEMISTRY: THE ANALYSIS OF FOODS AND THE DETECTION OF POISONS. By A. Wynter Blyth, M.R.C.S., etc. London: Charles Griffin & Co., 1879.

Mr. Blyth is well known as one of the most intelligent and zealous of the many Medical Officers of Health in this country, and no one has done such good service to sanitary science in the way of working and writing. We had the pleasure of reviewing not long ago his excellent and complete "Dictionary of Hygiene and Public Health," still more recently his pamphlet on Rabies, and now we have an important addition to his works in the form of a manual of practical chemistry, chiefly devoted to the analysis of foods and detection of poisons. Though the book is intended, we apprehend, for the sanitary officer and analyst,

yet as one half of it is devoted to toxicology, and as the methods for the detection of poisons are those which are the most recent and approved, it is as valuable in this respect to the members of the veterinary profession. These methods are given with the greatest clearness and exactness; so that any one who had studied chemistry and made himself acquainted with chemical manipulation, should have no difficulty in following the directions for discovering the vegetable or mineral poisons enumerated.

In the first portion of the book—that relating to the analysis of foods—the only section, perhaps, which possesses an interest for the veterinary surgeon, is that on milk. As our readers may have noticed, Mr. Blyth takes a special interest in this fluid, and his desire that our colleagues may assist him in procuring specimens of milk from diseased animals will, we trust, be readily and largely complied with. In this section of the manual, the portion on unhealthy and abnormal milk will be read with interest. The author says: "Of recent years much attention has been given to the spread of the contagion of such diseases as Scarlet and Typhoid Fever by milk. The cases are too numerous now to deny that sometimes these fevers are propagated through the medium of the milk. Some of the instances cited are, however, to the writer's mind, untrustworthy, and narrated by observers who appear, before they commenced their investigation, to have resolved to accuse and convict the milk." In making this observation Mr. Blyth is quite justified by what has occurred recently with regard to Diphtheria. It is fashionable just now to blame the milk when no other source of mischief can be discovered, and though there may not be a particle of evidence to support the charge; in this way serious injury is done to individual dairy-keepers, and needless alarm is excited in the milk consumers, while the etiology of the disorders is not promoted in the slightest degree.

Mr. Blyth gives a number of instances which go to prove the danger of using milk from animals suffering from Epizoötic Aphtha. He also appends several analyses of this milk.

Relying on Dr. Vallin's researches in Paris, and which are now being published in this journal, the author concludes that Phthisis in cows, although it may be a rare and occasional danger, is not one of any magnitude; "the disease also appears not to be so common as some writers believe. . . . . the milk of an animal thus diseased so rapidly decreases in quantity, that the cost of maintenance exceeds the returns of produce, and therefore the animal is soon slaughtered." We have pretty clear evidence to prove that in some countries, and even in some districts, Tuberculosis in cattle is not at all uncommon, and appears to be on the increase; and there can be no doubt that cows will very often yield a profitable supply of milk when seriously affected, just as oxen in apparently fair condition are found to be extensively diseased when slaughtered. But we will discuss this question on another occasion. We will only now, before closing our notice of Mr. Blyth's excellent book, make the following interesting extract:—

"Dr. Beale was the first to observe that in pneumonic patients, practically the whole of the chlorine was withdrawn from the urine. It

is, therefore, probable that in some internal inflammatory diseases of the cow, attended with exudation, the chlorides in the milk would disappear. This hypothetical observation. however, the writer has hitherto lacked opportunity to verify. Certain diseases of the kidney cause in milk an increase in urea, and though the presence of the latter may be found in minute traces in normal milk, any quantity capable of determination would be evidence of ill health."

In recommending Mr. Blyth's Manual to the veterinary profession, we feel sure that his investigations into the very important and interesting subject of milk in disease will be greatly facilitated and promoted by the numerous specimens forwarded to him by those who have the opportunity.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

REPORT OF PROCEEDINGS AT A SPECIAL MEETING, HELD ON THE 5TH MARCH, 1879.

Present—The President, Professors Brown and Pritchard, Messrs. Bat', Blakeway, Cartledge, Cartwright, Collins, Dray, Fleming, Greaves, Morgan, Proctor, Reynolds, P. Taylor, Geo. Williams, and the Secretary.

The SECRETARY read the notice convening the meeting.

The minutes of the Quarterly and Special meetings were read and confirmed.

Correspondence.

Letters were received from Professor Williams, Professor McCall, and Mr. Freeman, regretting their inability to attend the meeting.

A letter from Professor Simonds in reply to the letter sent by the Council sympathising with him in his recent domestic bereavement.

A letter from Professor Lieutard, Principal of the Veterinary College, New York, in which he desired to be presented with a copy of the Register for the Library of the College. It was accordingly sent.

A letter from Mr. A. Charles, Veterinary Surgeon, presenting to the Museum of the College an anatomical specimen of the penis of a whale. The only two other specimens of the kind were in the Museum of the Royal College of Surgeons.

A letter from Mr. Queenborough, of Boston, chemist, with which he sent a kidney taken out of a fat bullock, three years old. One kidney weighed half an ounce, while the other weighed two pounds. Both were enveloped in an average covering of fat, and there was no appearance of the internal organisation being wrong.

A letter was also received from Mr. Harrison, of Hereford, Veterinary Surgeon, presenting to the college a unique specimen of the head of a calf for presentation to the College.

On the motion of Mr. DRAY, seconded by Mr. TAYLOR, a vote of thanks was unanimously awarded to the donors for their presentations.

Mr. FLEMING presented some stones passed by a dog both by the mouth and the rectum in twenty-four hours. They were rather curious both as regards their angularity and number. Mr. Fleming also presented a Roman horse-shoe which he had succeeded in obtaining from the curator of the York

Museum. He said that the shoes he had already presented to the museum were only casts. He also presented two old shoes which had been dug up at Hendon, at a good depth below the surface, and they must be two or three centuries old from their shape. They were exceedingly curious and would tend to add to the history of farriery and to the interest of the museum. He had also to state that Mr. Petchley had sent up the head of a foal from Norfolk. The specimen was rather rare.

On the motion by Mr. DRAY, seconded by the PRESIDENT, a vote of thanks was accorded to Mr. Fleming for his presentations; and on the motion of Mr. FLEMING, seconded by Mr. DRAY, the thanks of the Council were unanimously voted to Mr. Petchley.

A letter was received from Mr. Withers tendering his resignation as Treasurer, in consequence of increasing private engagements, and expressing his thanks for the kindness and consideration that had been shown him during his fourteen years of office.

The PRESIDENT moved and Mr. DRAY seconded that the resignation be accepted.

The motion was carried.

On the motion of the PRESIDENT, seconded by Mr. DRAY, a vote of thanks was passed to Mr. Withers for his services.

Mr. DRAY was unanimously elected Treasurer in room of Mr. Withers.

Mr. DRAY in a few words returned thanks for the honour done him.

A letter was received from Messrs. Scott and Co., Bankers, Cavendish Square, stating that they had purchased £311 13s. 9d. Consols in the names of the three trustees, Messrs. Cartwright, Lowe, and Collins, and enclosing the broker's note and stock receipt for the same.

A letter was received from Messrs. Bayliss, Church Court Chambers, Old Jewry, enclosing a cheque for £104 6s. 8d., being a legacy from the estate of the late William Field, Esq., and which has been lodged in Messrs. Scott's Bank.

On the motion of Mr. DRAY, seconded by Mr. CARTWRIGHT, a vote of thanks was directed to be sent to Mr. Field's executors.

A letter was received from Mr. J. Puxley, of Colchester, wishing to be informed by a certificate as to whether Mr. Charles Marking, of Tipperfield, Essex, was a member of the Royal College of Veterinary Surgeons, and enclosing the fee. A certificate had been sent to the effect that he was not a member.

Letters were received from Dr. Dunsmure, furnishing a report of the winter examination of the College, which took place on January 15th, in which he stated that Mr. Hunt, owing to indisposition, was unable to attend, and his place during the practical examination was supplied by Mr. Robertson of Kelso. Out of the total number of thirteen students examined, four were rejected, and eight were admitted members of the College. One passed his minor examination, but none of them were entitled to honours. A balance sheet of the expenses and receipts was also enclosed.

A letter was received from Mr. Moore, Cow Street, Ludlow, Salop, wishing to be informed whether there would be a major examination under the old rules in Edinburgh in July next.

The SECRETARY stated that an answer was sent to the effect that there would be an examination in April and July next, and that it was required of candidates to comply with bye-law 34.

A letter was received from Mr. Ed. Davies, of Llangedwyn, Oswestry, in which he expressed his wish to go up in April next for examination without attending lectures; and, if he could not do so, asking if he could go up in July. He was furnished with an extract from bye-law 34.

A letter was received from Mr. George Taylor, Church Terrace, Cheadle,

Staffordshire, wishing to be informed if he could be examined under the old rules, having entered the Royal Veterinary College in 1869, attended the session 1871-2, and left the college in consequence of family illness. He was informed that he was ineligible to come up under the old rules.

A letter was received from Dr. Favié acknowledging receipt of the register, saying he would send an order to London for payment of "the third examination," and considering that he had dispensed with the first two examinations.

He was informed that there could only be the omission of the first year in the two years' study required by the bye-laws of the college, and that if he desired the diploma he would have to attend for two years the lectures of some recognised Veterinary School and pass the various examinations during that period.

Letters were received from three candidates for the diploma of the Royal College of Veterinary Surgeons holding the Highland and Agricultural Society's Certificate, and wishing to be informed if the agreement had been completed.

They were informed that the subject was still under the consideration of the Council.

A letter from Professor Vaughan was received, wishing to be informed whether a medical graduate from an American university whose diploma is recognised, is entitled to the exemption named in bye-law 47. He was informed that a student would be exempt from the first year's course of lectures, provided his diploma was approved and recognised by the Council of the Royal College of Veterinary Surgeons.

A letter had been sent from Dr. Rice to the President, asking whether the diploma of the University of Vermont, United States, conferring upon him the degree of M.D., would be recognised by the College as competent for presenting himself at the next examination of the Examining Board for his second examination for the membership of the Royal College of Veterinary Surgeons.

The following letter was also received :—

"GAYFIELD HOUSE, EDINBURGH,
"*February 19th*, 1879.

"William Henry Coates,
"Secretary R.C.V.S., London.

"SIR,—In reply to your letter of the 18th date, I may write that my diploma is from the University of the State of Vermont, and that I entered the New Veterinary College at date of opening of present Session, *i.e.* in October.

"I am, etc.,
(Signed) "F. R. RICE."

The PRESIDENT said the question was whether the Council would acknowledge the medical degree from the University of Vermont. He believed that, as a general rule, the University Degrees conferred by the older or Eastern States were valuable ; but in the newer or Western States they were of very little value. Vermont was one of the older Northern States, and he believed the degree conferred by the University of Vermont was quite sufficient for their purpose. He wrote to Mr. Williams on the subject, and got an answer to the effect that he considered Dr. Rice to have scientific ablities above the ordinary run of medical men in this country ; and that he was a very good physiologist and one of the best anatomists he had ever met. He (Mr. Williams) had every proof that Dr. Rice not only held the diploma of Vermont University, but that he was a member of the most exclusive Medical Society in Boston, which, he understood, admitted none but those possessed of the highest professional qualifications, and that Dr. Rice intended to be-

come a teacher of comparative anatomy or veterinary medicine when he returned to America. He (the President) begged to move that the diploma of Vermont be accepted as sufficient.

Mr. DRAY seconded the motion.

Mr. FLEMING thought it would be well to inquire as to the estimation in which the diploma of the Vermont University was held by the medical profession in this country. The Universities in many of the States were numerous, and some of them below par; and of the University of Vermont he had no knowledge. He thought inquiry should be made of the Royal College of Surgeons or the Royal College of Physicians as to the value of the diploma in question. He did not wish it to be inferred that he cast any doubt upon the diploma, or that Dr. Rice might think he was being subjected to any indignity; but Dr. Rice himself would see the force of his remarks as a matter of precaution.

The PRESIDENT then moved that a Committee be appointed to consider the question of Foreign Medical Diplomas under bye-law 47. The report of that Committee would no doubt hold good in future cases.

Mr. REYNOLDS seconded the motion, which was carried.

The Committee was duly appointed, the members being Messrs. Fleming and Collins, and Professor Pritchard.

A letter was received from Professor Walley, relative to a student from one of the veterinary schools who had been rejected twice under the old rules, and who now wished to join the Edinburgh Veterinary College, and present himself for his first examination under the new rules in April next. He was referred to bye-law 34, which provided that the student should give satisfactory proof of having attended the lectures and general instruction of the school at which he has been educated during the interval of his rejection. He was therefore not eligible to come up for his first examination.

A letter was received from Dr. Dunsmure stating that there would be a large number of students for examination, and proposing that the examinations in Scotland should commence on Monday, April 14th, if possible.

The examinations were fixed for Scotland on the 14th of April, and for London on Monday the 31st of March.

The following letter from Professor Williams was read :—

"THE NEW VETERINARY COLLEGE, GAYFIELD,
"EDINBURGH, *March 4th*, 1879.

"To W. H. Coates, Esq.

"DEAR SIR,—I am sorry that I cannot be present at the meeting, as I wanted particularly to draw the Council's attention to bye-law 46, the meaning of which I think has been misconstrued.

"In order to satisfy myself I have taken a legal opinion upon it, which is as follows :—That according to bye-law 46, an examination is to be held if there be nine candidates, and that such a number may be made up of candidates for the first, second, or third divisions of the examination (for example, three for each division).

"That if the bye-law were intended to exclude any number below nine from any division of the examination, it ought to have been as follows: 'No examination shall take place in the first, second, or third divisions of the examination unless there are at least nine candidates for examination in such division,' which would mean that, although there might be twenty-four candidates for examination, namely, eight in each division, still no examination could be held—a matter of great hardship.

"I now beg to enclose a notice of motion that I think will meet the case, and which I will thank you to suspend in the Council-room.

"I remain, etc.,
"W. WILLIAMS."

"*Notice of Motion as to alteration of Bye-law* 46, *that Bye-law* 46 *shall read as follows:—*

"*March 5th*, 1879.

"No examination shall be held unless there be nine candidates for one division of the examination; but if a Board be assembled and there be a candidate or candidate for another division, the examiners for which being within reach, then a Board shall be constituted to examine such candidate or candidates.

"*March 5th*, 1879. (Signed) "W. WILLIAMS."

The PRESIDENT gave notice that he intended to move the insertion of the word "each" in bye-law 46, after the word "for," *i.e.*, unless there were at least nine candidates for each examination.

A letter was received from Mr. Callow, of Horsham, Sussex, conveying his acknowledgment on being informed that he had obtained the first prize of the Royal Agricultural Society; also a letter from Mr. Jenkins of the Royal Agricultural Society acknowledging receipt of the report of the examiners, of which the following is a copy:—

"ROYAL AGRICULTURAL SOCIETY OF ENGLAND,
"12, Hanover Square, London, *February 7th*, 1879.

"DEAR SIR,—I am instructed by the Council of the Society to return to you the enclosed copy of a report which they have received through you from the Examiners appointed to test the qualifications of students competing for the Society's Veterinary Medals and Prizes, and to ask you to draw the attention of the Council of the Royal College to the opinions expressed by the Examiners in reference to the regulations which apply to this examination, and to request that they will draw up for the consideration of the Council of this Society such a modified scheme as in their opinion will meet the objections which appear to exist against the scheme at present in force.

"Yours, etc.,

"W. H. Coates, Esq., "H. M. JENKINS, *Secretary*."
"Sec., Royal College of Veterinary Surgeons.

The Fitzwygram Prizes.

Mr. D. Gresswell, of Louth, Mr. Reynolds, of Liverpool, Professor Voelcker, of the Royal Agricultural Society, and Dr. Dunsmure, jun., were appointed examiners for these prizes.

Report of the Examination Marks Committee.

The PRESIDENT, on the above report being presented, briefly explained its principles. The following is a copy:—

The Committee appointed by the Council of the Royal College of Veterinary Surgeons beg to submit a Report which they have drawn up relative to the marks to be assigned at the examinations.

The Committee recommend the scheme as herewith annexed.

The Committee recommend that the payments made to Examiners be by the hour, and at the rate of £1 1s. per hour, except for the Practical Examination, which should remain as heretofore.

The Committee recommend that numbers be substituted for names in the Examination sheets.

1. For a Candidate to pass with "very great credit," he must obtain marks within 5 per cent., or thereabouts, of maximum number.
2. To pass with "great credit," he must obtain two-thirds of the maximum number.
3. To "Pass" he must obtain one half the maximum number.
4. A Candidate failing to obtain the minimum, fixed at one third of the maximum, number of marks *in any one subject* is rejected.

RECORD OF THE PASS EXAMINATION.

Date _____

No.	NAME.	MORBID ANATOMY. Max. 24 Min. 8	PATHOLOGY AND PATHOLOGICAL TOXICOLOGY. Max. 24 Min. 8	VETERINARY MEDICINE, SURGERY, AND THERAPEUTICS.				TOTAL MARKS.	RESULT. Very great credit 171 Great credit 135 Pass 90
				HORSES.		CATTLE.			
				PRACTICAL. Max. 36 Min. 12	ORAL. Max. 36 Min. 12	PRACTICAL. Max. 30 Min. 10	ORAL. Max. 30 Min. 10		
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									

Examiners _____

_____ *Chairman.*

_____ *Secretary.*

The PRESIDENT said it might simplify matters if he were to put it in this light: "First, that it is desirable to adopt a system of marks instead of words; secondly, to discuss what number of marks were necessary to pass good, very good, and reject; and thirdly, to discuss the question of difference of value between the different subjects of examination. He begged therefore to move that the Council adopt the system of marks instead of verbal notation.

Mr. MORGAN seconded the motion which was carried.

The PRESIDENT then moved, "That it is desirable to establish a difference in value in the different subjects of examination." If the Council agreed to this they could discuss what value was to be assigned to the different subjects.

Mr. GREAVES thought there ought to be a relative difference in the value of different subjects students were examined upon. Mr. John Wilkinson had always held to that opinion, and had pointed out to him (Mr. Greaves) many instances where young men were good anatomists but bad practitioners, and he considered it of the greatest importance that the students should be able to diagnose diseases. If the student was well up in practice, even if he was somewhat deficient in chemistry, botany, and other things, it would be much to his advantage. He thought the marks ought certainly to be more in his favour if he was found to be a useful, good practitioner. He had great pleasure in seconding the motion.

Professor PRITCHARD said he was inclined to think that in the event of a pupil becoming acquainted with the fact that a little more importance would be attached to one subject compared with another, it would have a very demoralising effect on his mind. He proposed as an amendment that the marks be all equal.

Mr. CARTLEDGE thought it unnecessary to make any alteration in the marks because the theory that prevailed in the minds of the students that most importance was attached to the diseases of horses and the practical examination of them would still be maintained, whatever decision the Council may come to.

Professor BROWN agreed with Mr. Cartledge that the student well knew he would get off better if he passed a good examination in horse pathology than if he passed a good examination, say, in botany. On that ground he did not see any necessity for intimating to the examiners those subjects which were different in value. They, knowing the circumstances, would arrange the matter among themselves. There was, however, an advantage in keeping the numbers as they were now, giving more value to those subjects that belonged to the Pass Examinations than to the two previous ones. He had worked the proposed scheme out in a variety of ways and he quite approved of it. It seemed to him to be exceedingly well arranged.

Mr. GREAVES said that a system of marks was being laid down for the guidance of the Examiners, which in some measure took from them the discretionary power which they previously exercised. He maintained that if anything at all were done in the matter an authority ought to be given to them either to reject or pass a student more from that one table than from any other table.

Mr. REYNOLDS said that with regard to the first examination he found the maximum and minimum in each subject was the same. It would probably meet Mr. Pritchard's idea if, in the second examination, the anatomy of cattle were placed on an equal footing with the anatomy of the horse and physiology and histology, and the number of marks would be equal to those required for the first examination: and to show that this Council appreciated the subjects in the third examination more highly than the two former examinations, if the two subjects in the Pass Examination were put at a maximum of thirty-six, they should all be made equal. If Professor Pritchard accepted that as an interpretation of his motion, he would second it.

The PRESIDENT in reply to Professor Pritchard, remarked that Professor Pritchard had said that in the third examination on the more important subjects, the examiners would be more stringent in their requirements. The more stringent they were, the less marks they would give, in all probability: therefore on the easier subjects the student would get a fuller ratio of marks than if he were more stringently tested, and thus far there would be a disadvantage. The reason that cattle were put below horses was, that the diseases of cattle were less treated than those of horses. When a cow was ill, she was killed in an early stage of disease, because the flesh was valuable; but the horse was spared, because he was more valuable as a living animal.

The question was then put to the vote, when six voted for the amendment and eight against it. The original motion was therefore declared carried.

The PRESIDENT said that a compromise had been brought to his notice which he thought highly of. It was to retain the same number of marks for all the subjects, but that in certain subjects the qualifying number should be placed higher than in other subjects. Suppose the total number of marks in each standard for the Pass Examination was taken at twenty-four; for morbid anatomy it had been suggested to place the pass at twelve; but in practical surgery, both as regards cattle and horses, to place it at eighteen, or some such number, calling the attention of the students to the fact that that was a subject they must study, and in which they would require to be extra efficient. The idea was a good one, and on behalf of the Committee, he would be glad to adopt it. For the practical subjects, then, it would be twenty-four, "Very great credit"; twenty-one, "Great credit"; "Pass," eighteen; and "Reject," twelve. He moved that the Committee be requested to again meet to settle the question on the basis just laid down, and that the next examinations be conducted on that basis.

Mr. COLLINS seconded the motion, which was agreed to.

The PRESIDENT stated that a letter had been received from Mr. Jenkins as to the examination for the Royal Agricultural Society's prizes. What he (the President) would suggest was that Mr. Jenkins should be written to with a proposal to recommend the Royal Agricultural Society to allow as Candidates all those who had passed with great credit on cattle, although they might not have passed with great credit on other subjects. The limitation of period after taking the diploma should be extended for two years.

Letters were received from Mr. Loch, stating that the agreement between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society had been returned from Edinburgh.

It was duly signed and sealed on behalf of the Council, and returned to Mr. Loch.

Mr. LOCH also enclosed the draft Supplemental Charter, as amended by the President.

The DRAFT SUPPLEMENTAL CHARTER was taken as read.

Professor BROWN said he did not think any discusssion was necessary upon the document, as it was purely technical and legal, and would give a complete settlement to the question at issue. He thought the Council could not do better than accede to it.

After some discussion as to Clause 3 of the Charter,

The PRESIDENT moved that Mr. Loch be instructed to apply for a Supplemental Charter, and that Clause 3 be included in it.

A form of diploma for the holders of certificates, granted by the Highland and Agricultural Society of Scotland, was submitted to the Council, and ordered to be sent to the Highland and Agricultural Society for approval.

Some conversation then ensued as to a site for the proposed new College; but it was decided, before taking any further steps, that a deputation should again wait upon the Duke of Richmond to ascertain exactly his views as to

the probability of the Government giving a money grant towards the erection of new premises, or the use of some Government building.

The PRESIDENT said that he had omitted to call attention to a recommendation of the Marks Committee, "That the payments made to Examiners be by the hour, and at the rate of £1 1s. per hour, except for the Practical Examination, which should remain as heretofore." The object of that was that if there was a small number over the twelve or the nine, if the Examiners got so much by the hour they would probably stay on an hour longer that evening and finish, instead of the Council being obliged to appoint a new evening for Examiners at £3 a-piece.

Professor TURNER and others were agreeable to this arrangement.

Notice of Motion for a new Bye-law to follow 32 of the present Bye-laws, by GEO. FLEMING, F.R.C.V.S. :—

"*March 5th*, 1879.

"That in case any student, after having attended the prescribed course, is prevented by any cause—the fault not being his own—from presenting himself for the First or Second Examination, he shall, after having passed the particular Examination, be allowed to present himself for the one immediately following, by studying one term less than he would by the Bye-laws 31 and 32, provided the full number of terms shall have been complied with."

On the motion of the PRESIDENT, seconded by Mr. DRAY, permission was granted to the Secretary to reside out of College if he should wish to do so.

Mr. FLEMING and Mr. GREAVES spoke in feeling terms of the bereavement Mr. Coates had sustained, and which necessitated a change of residence.

It was agreed that the College premises be left in the charge of some responsible person during the night, and that the Secretary be in attendance at 10, Red Lion Square, for business, from 10 a.m. to 4 p.m., except on Saturday, when it shall be from 10 a.m. to 2 p.m.

The Council then adjourned.

ROYAL AGRICULTURAL SOCIETY.

At the monthly council meeting held on March 5th, the Hon. W. EGERTON, M.P. (Chairman), reported that the Committee had received the following report from the Royal Veterinary College, including the particulars of an outbreak of disease in a flock of ewes, the property of B. Moss, Esq., Arlingdon Hall, Essex.

In consequence of a destructive disease having shown itself among lambing-ewes in different parts of the country, and several diseased animals having been forwarded to the College, as well as the carcases of others, a special investigation of the matter was ordered to be made by the Principal, who has received the following report from Professor Axe :—

From communications which we have received, it would appear that this affection prevails to a serious extent in several parts of the kingdom, and the mortality cannot be less than 70 to 80 per cent. of the animals attacked and, in some instances, as much 30 to 40 per cent. of the entire flock. So far as I have been able to investigate the circumstances relating to the disorder, the following facts have been ascertained. The malady is confined to ewes, and attacks most frequently and severely the aged, and such as are the subjects of debilitating organic affections or constitutional weakness. It prevails especially in flocks whose diet during the winter months has consisted entirely, or nearly so, of grass, or turnips, or which have been otherwise sparingly fed. The Down and mixed Down, breeds appear to be the most susceptible, as well as those ewes which bear twin lambs. It usually appears

suddenly, about seven to fourteen days prior to parturition, or shortly afterwards; and in those instances in which ewes are pregnant with twins, as many as 80 to 90 per cent. have been attacked.

In those instances in which it follows parturition it proves rapidly fatal.

The duration of the malady varies from twenty-four hours to three, four, or occasionally seven days, but the shorter periods are the more common. It is non-contagious. The presence of the sick, however, has in some instances appeared to excite abortion in the healthy ewes, and thus occasioned additional loss.

Symptoms.—The primary indications of ill-health consist in a separation of the sick from the healthy, a disinclination to feed, and a dull, lowering expression, attended with feeble movements. In this condition the animal continues only for a short time, and other and more urgent symptoms quickly develop themselves. The gait now becomes very unsteady, the head is carried near the ground, the ears and eyelids droop, and the general expression is one of extreme prostration, being not unfrequently followed by complete paralysis. The constitutional disturbance is further marked by a considerable rise of internal temperature, the heart's action becomes quick and feeble, and the respirations hurried. Should the disease continue its course, nervous phenomena of a very characteristic type appear. The muscles of one or more of the limbs are feebly jerked towards the trunk. The eyes are fixed, and drawn deeply into their orbits, while at the same time the pupil is directed outwards. The head is either drawn directly backwards, and supported in a rigid manner, or it is thrown on to the side, where it persistently rests, as is seen in cows suffering from parturient apoplexy. The lips are turned upwards, or moved from side to side.

As the malady progresses all these symptoms become aggravated, and the wool readily leaves its follicles. In other cases, where parturition has taken place, symptoms of abdominal pain are manifested, owing to inflammatory infiltration of the uterus. The animal moves round and round, and afterwards throws itself down, and turns its head again and again toward the flank. Pain is evinced on pressing the belly, and likewise in voiding the fæces or urine; there is always more or less straining and tumefaction of the vulva, with ejection of a thick, red, and tenacious substance, consisting of blood, mucus, and the *débris* of fœtal membrances. Occasionally, besides the group of symptoms referred to, there is more or less discharge of a muco-purulent character from the eyes and nose, but I am disposed to regard this as accidental, and owing to exposure in the early period of the disease.

Examination after Death.—The body is invariably emaciated, although in many instances a fair amount of fat is found in the region of the kidneys. Decomposition sets in early. The cavity of the belly sometimas contains a greater or less quantity of bloodstained fluid. The intestines are pale, and their walls attenuated. The mucous or lining membrane may or may not be reddened, in some instances it is much so, and at the same time swollen and pulpy: but in numerous cases it is free from any pathological alteration whatever. Similar changes to those last referred to are sometimes found in the fourth stomach, but the first, second, and third stomachs seldom show any alteration either in appearance or structure.

The liver is usually small in size, frequently pale in colour, soft in consistence, and granular in character. In some examples it is congested, red, and largely infiltrated with serosity, while in others it exhibits no perceptible alteration. The kidneys are small, soft in consistence, and easily broken down. In some cases they present a more or less congested state, but in other respects they are free from structural change. Only where the urine is retained for a long period, owing to muscular paralysis, is there any perceptible alteration in the bladder. In these instances the mucous layer is con-

gested, thickened, and occasionally infiltrated with blood as the result of a rupture of its vessels.

When parturition has not taken place, the walls of the uterus are generally thin, pale, and flaccid; but they present no perceptible indications of structural change. On the other hand, in those cases in which parturition has been effected, either previously or subsequently to the attack, the uterus exhibits pathological changes of the most varied and destructive character. The outer or serous tunic of the organ is covered more or less with pseudo-membranous layers of fibrine, which in places become united to corresponding portions of other viscera, more commonly to the rumen or paunch. The uterus is moreover of an intensely red hue, and void of its smooth and polished aspect. The walls of the viscus are not contracted. The cavity contains a large quantity of dark-red or chocolate-coloured matter, consisting of spoilt blood, mucous, epethelial, and inflammatory elements, and the disintegrated remains of fœtal membranes. The mucous membrane is swollen and soaked with sanguineous fluid, or the tissue is ploughed up by blood extravasation. In this condition it is soft, pulpy, and easily broken down. In such a state of the mucous layer the underlying tissues are always more or less infiltrated with serosity, and opened out in every direction, giving to the organ a thickened and rigid character, and at the same time rendering it soft and lacerable in all its parts. In some instances the vessels are plugged with dark coagula and portions of the organ are in a gangrenous condition. The vaginal passage contains materials of the same nature as that remarked in the uterus, and the structures composing its walls participate to a greater or less extent in all the uterine changes.

In nearly all cases the lungs exhibit a more or less congested condition. In some they are also uniformly œdematous; and in others beset with hæmorrhagic patches, or points. Pneumonic consolidation is occasionally present, as are also embolic softenings and gangrene of smaller or larger areas of pulmonary tissue. The two last named lesions are usually associated with extensive disease and disorganization of the uterine walls.

In numerous examples the heart is flaccid, and its tissue soft, but beyond these no changes of note are to be detected. When uterine complications result in blood contamination (septicæmia), blood blotches and petechiæ are invariably found beneath the lining membrane of the left cavities.

In the brain the chief lesions consist of engorgement of the large vessels at the base, general congestion of the coverings, œdema of the nerve tissue, and in some cases serous effusions into the sub-arachnoid spaces.

From a full consideration of all the facts relating to the malady in question, I have arrived at the conclusion that it is due to the debilitating influence of exposure, operating through a long and severe winter, on animals subjected to a defective and illiberal dietary system. This conclusion is based especially on the following observations:—

1. That the older and more weakly ewes are most frequently its victims.
2. That all those animals which are constitutionally weak, or affected with organic disease, whereby the nutritive functions of the body are impaired, are the first to succumb to the malady.
3. That such of the ewes as are pregnant with twin lambs, and on whose system the greatest demand has consequently been made for the materials of the growth and life of the young, are most susceptible to the disease.
4. That the period at which the disorder occurs, viz., seven to fourteen days before parturition, marks the failure on the part of the system to sustain the organic activity which is then required to consummate fœtal development and prepare for parturition.
5. That the outbreaks on which this conclusion is based prove that the

dietary system was manifestly defective when considered in relation to the trying conditions of the present season.

6. That whenever the restorative system of treatment has been adopted the disease has been arrested.

In considering the influence of the present season in regard to this affection, it must be remembered that the mere outward exposure to cold and wet is by no means the only element of mischief. On grass pastures, as well as in the turnip fold, a great thickness of snow has not unfrequently had to be removed before food could be obtained, and in the former case this has necessitated long-continued exertion and a corresponding degree of fatigue. Moreover, every mouthful of food has been charged with an amount of moisture which must have contributed largely to render thin and watery, and otherwise to spoil and reduce the nutritive properties of the blood. The malady may be said to belong to that great group of disorders which annually produce such appalling waste in our flocks and herds, and consequently a paucity of home supply of meat. Recognizing this, the principles to be studied are clearly those which belong to the art of hygiene. Recent experience has afforded abundant confirmation of this view of the causes of the malady.

The adoption of a strictly restorative system of treatment, involving a liberal and well-regulated diet, together with the administration of ferruginous tonics and saline alternatives, has been singularly effective in arresting the progress of the disease. It is well-known that nothing tends so much to the embarrassment of the constitution, and the production of disease, as the injudicious changes and neglect which are usually permitted in the feeding of sheep; and more especially breeding ewes, which of all others demand the most careful attention. By far the greater number of fatal diseases to which ewes and lambs are liable are of a preventible nature, and their origin is due either to the quantity or quality of food, or to a bad system of management. It too frequently happens that stock ewes are made the scavengers of the farm, and but little regard is paid to their pregnant condition. Turnips that have been eaten off by other sheep, without any additional or more substantial fare, are not unfrequently considered by some persons to be quite sufficient to sustain the system of breeding sheep through the trying period of pregnancy, and this altogether regardless of the fact that the maturing of the fœtus is being consummated during the coldest and otherwise the most unsalubrious season of the year. Practical experience has shown, again and again, that in ordinary seasons the ewe flock may be sustained through the period of pregnancy, on an exclusive grass or root diet; but while such experience serves to illustrate this fact, it by no means justifies an unqualified adoption of the system. Breed, condition of body, condition and quality of soil, temperature, and other considerations should at all times be taken into account in dealing with the important questions of the food and health of animals.

The adoption of the principles of treatment contained in the preceding part of this report was speedily attended with benefit; and I am informed that no fresh cases have occurred since my visit, and that the sheep are now much improved in their general health.

With special reference to the outbreak of this disease in a flock of ewes, the property of B. Moss Esq., Harlingdon Hall, Essex, it may be stated that the particular flock in question originally consisted of 145 ewes of the mixed Down breeds. They were divided into two lots of 14 and 131 respectively. The former were old ewes, and the latter a mixed lot of various ages. During the winter the larger number were placed on upland pasture, while the smaller had given to them, in addition to grass, a small quantity of dry food.

The disease first appeared on the 1st of February in the smaller lot; out of which two have died. On the 12th two of the larger lot developed the disease, and others, to the number of eight, were subsequently attacked, and destroyed in consequence.

J. WORTLEY AXE,
Professor of Morbid Anatomy at the Royal Veterinary College.

SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE annual general meeting of this Association was held in the London Hotel, Edinburgh, on the 12th February. The following gentlemen were present:—Professors Walley and Baird; Messrs. Robertson (Kelso), Cunningham (Slateford), Balfour (Kirkcaldy), Balfour (Markinch), Rutherford (Edinburgh), Reid (Leith), Young (East Calder), Baird junior (Edinburgh), Storie (East Linton), Black (Howgate), Aitken (Edinburgh), Waugh (Stirling), Reekie (Edinburgh), and the Secretary.

Letters regretting inability to attend were received from Professor Vaughan, and Messrs. T. Taylor, and Tedbar Hopkin (Manchester), and McIntosh (Dumfries). Professor Baird, Dick Veterinary College, as retiring President, thanked the members for the courtesy extended to him during the past year, and begged to introduce Mr. Rutherford, his successor in office. Mr. Reekie was elected a member of the Association.

The SECRETARY then presented his report concerning the membership of the Society and the state of its funds. The report was adopted. He also reported that the Honorary Secretary of the National Veterinary Benevolent and Mutual Defence Society, had kindly furnished him with copies of the rules and regulations of that body, which he had circulated among the members of the profession in Scotland. He stated that he would postpone the motion of which he had given notice at the previous meeting, until the provisions of the agreement between the Highland and Agricultural Society and the Royal College of Veterinary Surgeons had been carried into effect.

The PRESIDENT gave notice of his intention to move at next meeting, that the Association subscribe annually the sum of one guinea to the Society for the Prevention of Cruelty to Animals.

Professor WALLEY exhibited a specimen of Osteoid Sarcoma in the femur of a cat, of which the following are the notes:—

The subject of this affection received an injury about two years ago, the femur, it was thought, being fractured. For some eighteen months the case had been under the observation of Mr. A. Grey, Junior, and as the leg had attained an enormous size, and the cat had become very anæmic, she was poisoned, Mr. Grey submitting the diseased limb for my inspection.

After removal of the skin, the limb presented the appearance of an enormous pear-shaped swelling, (the circumference of which was as great as that of the cat's body), extending from the head of the femur above to the tarsus below. Its surface offered several salient fluctuating points, which on puncture gave exit to a tenacious bloody fluid, and on pressure characteristic egg-shell crackling could be detected. On cutting through the tumour in a longitudinal direction, the usual characteristics of an osteoid-sarcoma were well shown—viz.:—firm, dense, glistening tissue of a whitish grey colour, between which numerous loculi existed, whose walls were composed of thin layers of cartilaginous and ossific matter, and containing masses of semi-coagulated blood, with fluid of the same character as that which was evacuated prior to section. The surrounding muscles were atrophied, some of them absorbed, all of a pale colour, and largely infiltrated with sarcomatous elements.

The whole of the lower half of the femur was absent; the distal extremity of the upper half was expanded and its medullary cavity hollowed out.

Microscopical examination revealed a very delicate fibrillated stroma with large spindle and myeloid cells, the former greatly predominating in number. A certain proportion of coloured and colourless blood corpuscles were also present.

As may be easily imagined, the tissues of the body were extremely anæmic and the bloodvessels empty.

Professor WALLEY also exhibited the small intestines of a fœtal calf, which was the subject of spiral torsion, the axis being a fold of the mesentery. Venous strangulation was complete, and the intestine, as a consequence, presented the thickened intensely hyperæmic and ecchymosed condition seen in intestinal torsion of adult animals. The fœtus from which he obtained the specimen had been forwarded that day by Mr. Taylor of Seaford, and it was in the course of dissecting it that Professor Walley discovered the state of the intestine. The fœtus was extracted from a cow, by Mr. Taylor, two days previously; it was of large size, and fully developed, but had never breathed, and was a beautiful and perfect specimen of a *Dicephalus bispinalis quadrupes* monstrosity, the two heads, necks, spines, and tails, being perfect. The four legs also were perfect, and the chest was nearly a yard in girth. On dissection, it was found that all the internal organs were fully developed, but single. The sternum and pelvis were also single, and no connection other than these, the skin, and connective tissue existed between the two spines. There were two sets of ribs, the superior set being much shorter than the inferior.

Both spines formed a distinct lateral curvature in the posterior part of the thoracic region.

Mr. TAYLOR had not had time to give any particulars of the case, further than that the fœtus was extracted with some difficulty, and the cow was doing remarkably well. He promised details in due course.

The PRESIDENT then proceeded to deliver his inaugural address as follows:—

Gentlemen,—In accordance with a promise made about a year ago, I purpose in this my inaugural address to give you a sketch of the history of Inoculation for the prevention of Zymotic Pleuro-pneumonia, its practice, etc. In Gamgee's "Domestic Animals in Health and Disease," published in 1862, we find it recorded that Dr. Willems, of Hasselt, in Belgium, suggested and carried out in 1851 inoculation with the virus of Pleuro-pneumonia, in order to induce a mild form of the disease in healthy animals, and so prevent their decimation by attacks due to contagion. The work met with much encouragement, but, perhaps quite as much opposition; for while many accepted Dr. Willems' results as incontestable, and wrote advocating his mode of checking this destructive plague, as many more, notably Riviglio, a Piedmontese veterinary surgeon, ably contested the validity of the conclusion arrived at by Willems. Gamgee further records that in 1854, a commission was appointed by the French Government to make investigations into the subject, and that although they in part confirmed Riviglio's unfavourable opinions, they, from the incompleteness of their experiments, recommended a further trial of it. Gamgee himself at this date (1862) was evidently violently opposed to it; for we find him say "the practice of inoculation is one which I have to condemn from experience," and that any good which follows its adoption is such as would follow the use of setons, and is obtained at the cost of a certain percentage of deaths, and cases of gangrene of the tail. Again, on the same subject he says, "The all important question, Is inoculation of service? has been solved, for the Belgian and French commissions, Riviglio's, Simmond's, and Herring's observations, with those of many more

(added, I presume to his own experience), prove that, while a certain degree of preservative influence is derived by the process of inoculation, it does not arrest the progress of disease."

I desire you, Gentlemen, to note that opinion, published by Mr. Gamgee in 1862; for further on I shall be able to show you how completely it has been upset.

Holding the opinion he did in 1862, it appeared strange to me that he should, in company with Herring—another dissentient—at the first International Veterinary Congress, held in Hamburg in the following year, 1863, be a party to a resolution which was passed to the effect that the inoculation of cattle should be made compulsory. At that Congress there were present, in addi- to Gamgee and Herring already mentioned, Professors Gerlach and Hertwig, of Berlin, Roll, of Vienna, Nicklas, of Munich, and some others equally eminent, and it is worthy of note that no opposition was raised to the resolution. It may have been that they did not think it worth while, believing in the then unsatisfactory result of inoculation being sufficient to deter any Government from giving effect to the resolution; but it may also have been that their minds were not fully made up—that, in short, while sensible that in inoculation there existed a beneficial result, it was not such as they would require to have before subscribing fully to it. Whether or not the Continental veterinary mind is any clearer on the subject now, I cannot tell you. Gentlemen, I am afraid it is not, else we would have heard more about it.*

In this country, then as now, I believe I am correct in stating that the veterinary profession were and are against the practice; at least all with the exception of a very, very few—so few that they may be counted on the five fingers. I have been particular in noting the state of the veterinary mind at that time, because from my own experience I am fully convinced that the adverse verdict arose from the misapplication—I would use a stronger term, "ignorance"—of the true method of inoculation and blindness to the conditions which are necessary to its successful practice.

The measure of success with which, however, inoculation had in some instances been attended, was happily quite sufficient to keep it from dying out. Slumbering on the Continent, tabooed in this country,† it yet managed to gain a footing in Cape Colony, where, to the best of my belief, it is still practised. From the Cape it found its way to Australia, and was first successfully tried there in 1862, the very year—strange to say—in which it had been so unhesitatingly condemned by Gamgee here.

Introduced by a cow landed in Melbourne from England in 1858, Pleuropneumonia had gradually, but none the less surely, spread from Victoria to the neighbouring colonies of South Australia and New South Wales, and from thence into Queensland. All attempts to stamp out the disease by quarantine and wholesale massacre proved useless, and as the rapid march of the scourge bid fair to deprive the country of one of its principal sources of wealth and economy, stockowners began to consider if there was no other method of combating it.

It was then that inoculation was tried, by first one and then another, and so on; and although it must have been under very adverse circumstances, the results were largely satisfactory; so much so, that for a time the operation became a very general one, as it is at the present time.

* In "Veterinary Sanitary Science and Police," Vol. 1, will be found a *résumé* of Continental opinion on the subject up to 1875. At an early date we purpose referring to still more recent evidence.—ED. *V. J.*

† We have always been favourable to the practice of inoculation, and have done our best to obtain for it at least an extensive trial. This will be evident by reference to the work just alluded to.—ED. *V. J.*

It must not, however, be supposed that its introduction there was unopposed, or that its growth has been a regular one. On the contrary, to my knowledge it has met with very severe handling, hostile criticism, and, in some isolated instances, I believe, condemnation. At first its success in the hands of a careful few was all that could be desired ; but as its more general adoption grew with men's fears of the disease and its rapid spread throughout an extensive country, those best acquainted with the mode of operating and the necessary precautions to be observed were unfortunately too few to be of much avail in preventing the operation from getting into the hands of adventurous anybodies, —whose sole aim was the filling of their pockets for the time—not the successful application of that which they pretended to practise.

You may imagine the results. The deaths from casualty and mal-practice were quite as many as from the disease. Frequently the cattle were not inoculated at all; so that between mal-inoculation and the disease, they were often worse than they would have been if left alone. This was notably the case in Victoria and Queensland ; but not so much so, I believe, in New South Wales, where the most intelligent personal efforts of Chief Cattle Inspector Mr. Bruce to instruct had, as they continue to have, the best possible results.

Up to 1868, I cannot say that I had given the subject of inoculation any consideration. As a student I knew its literature and of Mr. Gamgee's attempt to introduce it into Edinburgh (that of course, prior to 1862), and also of its ignominious failure in his hands ; and as I had no means of knowing that the failure arose from the operation being grossly wrongly performed, if I had any opinion at all, it was, I would say, an adverse one.

In the year mentioned, however, and yearly afterwards up to 1874, I had occasion to be in Australia, and had my attention drawn very strongly to the subject by Mr. Graham Mitchell. That gentleman was kind enough to furnish me with the fullest information with regard to it ; more, he demonstrated its efficacy so convincingly that I have to acknowledge that it is entirely to him I owe the debt for any credit which has attached itself to my work here in Edinburgh. Mr. Mitchell, I believe, has to be credited with the honour of being the first uniformly successful practiser of inoculation, and has reaped his reward.

I have now brought the sketch down to 1874, in which year I returned to this city ; and although I had almost immediately abundant opportunity of trying conclusions between inoculation and Pleuro-pneumonia, I found the disastrous results obtained by Gamgee so vividly in the recollection of the dairymen that it was impossible for a time to get any one to permit of its re-trial. I must tell you I did not promise that the thing would be a certainty, because my experience of it in Australia was derived from what I knew of its operation upon cattle living a natural life, under very superior climatic and other conditions, in which respect they differed very materially from the great bulk of our subjects here, at any rate from my subjects—dairy stock, existing under what may be termed high-pressure conditions. I knew, however, that the disease abroad was the same sa here, and was of opinion that if Mr. Mitchell's method was adopted in preference to that on the Continent, that we would get Mitchell's results. That my opinion was correct has been fully and conclusively verified.

I have made an abstract of my last year's work, and I find that I commenced to inoculate on the 1st of February, and I left off on the 18th of November. During that time I inoculated in 78 different localities, all of which, with the exception of 51, were within 3 miles of this room.

Of these places there were

	Infected at date of operation		70
Not	„	within three months prior	2
Not	„	„ six months prior	3
Never	„		3

The number of animals inoculated was 1,596, all of which, with the exception of 28, were milch cows.

Of this number 1,511 were inoculated when the disease was in the byres in which they were housed.

46 had not been exposed for three months to an infected animal in their byres.

21 had not been for six months.

and 18 never, so far as the byres were concerned.

Of the gross total, I lost a fraction under 5 per cent. from casualty, the result of inoculation and from failure of inoculation to give immunity. I would, however, ask you, gentlemen, to bear in mind this very important circumstance, that 5 per cent. of casualty is a very much lower death-rate than has been yet obtained; and as my work last year was largely experimental, I am sensible its being so increased my average. I am fully of opinion that, entering this year again upon the same course, with my last year's experience, I shall, if spared, be able in another year to report to you a still lower one. My death-rate was not in proportion to the individual number done in individual instances, but to the systemic conditions under which they were done, the mode of operation, the weather, etc. Hence it is that I say I have now a knowledge of a great deal to be avoided, which I had not last year. Taking the systemic conditions first, I find that it is not advisable to inoculate cows immediately before calving. I would not like to do it upon any cow that had less than eight or ten weeks to run; nor is it advisable to do it immediately after calving. At least fourteen days ought to be allowed to elapse, and it should only be done then, if the animal has both locally and constitutionally recovered from parturition.

It should not be done, but deferred, if there is the slightest degree of inflammatory action in any part of the body; in short, the animal should be, as far as we can ascertain, well in all respects. It should not be done if we consider the animal to be already affected with Pleuro-pneumonia; but, at the same time, I must tell you that I have reason to think that there is a stage of the disease, the very earliest, when if inoculation is performed, good results may reasonably be expected to follow. I do not advise it, however.

It is not advisable to inoculate in very hot weather, such as we experienced last July, especially if the animals are in close, confined, and badly ventilated byres; and it is still less advisable to inoculate during the winter months, unless special arrangements can be made for maintaining a uniform warm temperature. It is not, in my opinion, advisable to inoculate with any but one kind of virus, and that should always be fresh and absolutely free from any foreign matter; nor is it advisable to adopt any modification of the true method of inoculation. During last summer I tried several plans with the view of obtaining perfect results, with less risk and inconvenience to the animal; but I have, as the result of my experience, resolved not to do so any more The very few animals that I have had take Pleuro-pneumonia within a reasonable time after inoculation—say, after a month—have invariably been animals inoculated mildly; in fact, that had not been inoculated at all, as compared with others. I would ask you to note that mild or modified inoculation is not to be depended upon, and should not, therefore, be practised. I am of opinion that there is only one mode of inoculation, and shall now describe it.

The virus or lymph should be obtained from an animal not too far gone in the disorder, and from one that is in other respects in fair condition, and free from other disease, as for instance, Tubercle. "Lymph" is the amber-coloured liquid exudate found in the interlobular tissues, between the pleural membrane and lung, and occasionally in semi-coagulated masses between and on the surface of the pleura. Too much care cannot be taken in selecting the lymph to be used; as its fitness is the most important thing in

connection with the operation. I have said select and use only the liquid amber-coloured exudate free from blood, serum, and other extraneous matter; do not on any account be tempted to use anything else. The want of due care in this respect was one of the chief causes of the failure of inoculation in Gamgee's hands, as it has been in that of others, and would be again in like circumstances.

Having obtained your lymph, you saturate with it as many pieces of white worsted, eight to nine inches long each, as there are animals to operate upon. The instruments required are a pair of strong clipping scissors, a pair of rowelling scissors, and the needle. The latter should be four-and-a-half inches long, about a quarter of an inch broad, rounded on the edge, and carefully tempered, so as not to break or bend, lancet-shaped at the point, just behind which it should be pierced with a long eye and be slightly grooved for retention of the thread. It should be fitted with a small handle, to facilitate the passing of it through beneath the skin.

The proper place to inoculate is the tip of the tail. Of course you can inoculate any part of the body; but the tail-tip is to be preferred, because you get perfectly good results from operating there; and if, during the process that follows inoculation, it should become necessary to remove it, such may be done with no risk and little inconvenience to the animal. Further, extensive swelling of a specific character, and gangrene, are less likely to follow the operation when the tip is selected, in preference to the root of the tail.

In operating you require the assistance of two men and a lad: one man to hold the animal by the head, one to distract her attention behind with one hand, while with the other he grasps the tail firmly to prevent it from being whisked out of the operator's hand. The lad is required to hold a saucer, containing the threads, ready saturated in the lymph, to be used.

The operator, standing behind the animal, seizes the end of the tail, and with the scissors removes the hair, beginning an inch or so from the extreme tip, and clipping upwards for five or six inches, and leaving only a short tuft at the end. Then with the rowelling scissors he makes two transverse cuts through the skin on the posterior aspect of the tail, leaving a space of three inches at least between the cuts. The needle is then slightly dipped into the lower cut, passed upwards and outwards through the upper cut, and turned round sharply several times to enlarge the channel. Then threading the needle with a doubling of the worsted, he carefully withdraws it, leaving the saturated thread in the tail; and after cutting any too long ends of the worsted off, the operation of inoculation in its first stage is complete.

Within two or three days after inoculating, the part operated upon becomes slightly swollen, painful, and erythematous, but there is no discharge from the orifice, similar to what we get from the introduction of an ordinary seton; the swelling locally increases; and although the tail above may not be in the least degree swollen, the animal is not able to lift it. About the ninth day the skin is observed to take on a yellowish tinge, there is a rapid desquamation of the cuticle, followed by an exudation on its surface of beads of amber-coloured lymph, similar to that introduced, and possessing similar properties. It usually takes from nine to twelve or thirteen days for the exudate to make its appearance. Occasionally a longer time is required, but when it does appear, inoculation may be considered to have been successful, and the second stage is complete.

There are two courses now open to the operator, and much of the success of the operation depends upon which he will adopt. He may elect not to interfere with the process, but allow it to run its course, which, under ordinary circumstances, will be death and wet gangrene of the end of the tail, followed by its being thrown off. This is usually done by nature establishing a line of demarcation above the gangrenous end, sufficiently powerful to resist the

spread of the gangrene. It is, however, impossible to be certain of this line being drawn, or the position of it; and the risk is then materially increased of gangrene spreading upwards towards the root of the tail, where it becomes highly dangerous. For this reason, I advise the non-adoption of the plan of allowing the process to run its own course. I find the best plan is to remove the end of the tail, when once inoculation is fairly established. There are cases in which this must be done even earlier, and there are others in which it may have to be accomplished more than once; as, for instance, when the sudden setting in of coldness of the end of the tail indicates the death of the part. The best guide we have for knowing at what place to amputate is obtained by examining carefully the end of the tail. The part to come off may not necessarily be cold, but it will be wet with exudate and probably somewhat discoloured for an inch or so above it. I find that where amputation is practised early—say on the twelfth to the fourteenth day—that it is not necessary to make the division more than a finger's breadth or so above the upper incision made in inoculating. The amputation should be followed by profuse bleeding. If not, and if on examining the end of the stump we find clotting of blood in the vessels, amputate again higher up till bleeding follows. Neglect of this measure is apt to be followed by gangrene, in fact, the engorged vessels are an indication that it has already set in.

Where a number of animals have been operated upon, you will find that several of the tails will, after amputation of the inoculated portion, scab over and heal almost at once without further inconvenience. In the greater number of cases, however, swelling of the end of the stump sets in (and so long as it remains warm, no anxiety need be entertained), followed by suppurative process and the throwing off of a small portion of the tail. This process, I have said, is not to be feared; neither is the formation of abscess higher up, so long as it is confined to the tail. All the local treatment necessary is fomentation twice or thrice a day with carbolised water, and the dipping of the end of the tail in a strong solution of carbolic acid—the latter always after milking. A large per-centage of the cases heal up by the end of the fourth, fifth or sixth week; but very few extend beyond these periods, unless abscess has formed at the root of the tail. I must point out that this is not ordinary abscess, but is owing to the localisation in the part of the peculiar inflammation induced by inoculation; to the formation of exudate in a firm solid mass and to its subsequent partial liquefaction, when softening and pointing of the skin take place.

I have said that the abscess following exudate deposit at the root of the tail occurs occasionally as an ordinary sequel of inoculation; but more often it is the result of a kick when the animal is lying, or a blow with a milking stool or stable fork, either of which, I regret to say, is much too frequently administered. When the result of external injury, the swelling is usually on either side of the tail, over the ischiatic prominences, on the butt of the tail, or the quarter; I have also seen it on the ribs, the shoulder, and front of the sternum, in which situation the provocative is a bruise in lying down, or against the trevis post or feeding trough. So long as abscess forms there is no danger to be apprehended; but if, instead of abscess, you get extension of the exudate, loss of appetite and symptomatic fever, the case becomes a grave one, and the animal had better be slaughtered. In like manner should she be treated when the urino-genital organs and region become similarly affected, from extension of the exudate from neighbouring parts. The condition presented by a cow in the latter circumstances is so painful, that we may congratulate ourselves it is not of very frequent occurrence; and I am satisfied that experience will do much in the way of rendering it less frequent.

Scarification of the exudate has been recommended by the Australian authorities, but my experience does not bear out its practice; on the contrary,

the one thing that affords relief is constant fomentation with water almost too hot to bear and strongly carbolized.

Males, young stock, and calves, I find from experience can be inoculated with little or no risk, in Australia the per-centage of death and casualty being lately given as low as two per cent. During last season, I inoculated only about thirty bullocks, but I did a considerable number of calves in different infected places, and with the best possible result—no casualty, and as yet perfect protection. This is a very important fact; for should inoculation ever become general in the country, the necessity for doing it upon our home-bred stock when purchased into dairies would be obviated by their being done at an early period of their life, when the operation, while being equally protective, is attended with little or no risk, and does not call for any after attention and treatment.

I have nothing to say to you on the subject of diet while animals are under the operation. I have inoculated under all conditions in this respect, and find that the diet only requires to be rather below than up to the mark in quantity for the first three weeks, and of a nature calculated to maintain the perfect health and function of the stomach and bowels. The French commission, I think, recommend a saline purgative about the eighth or ninth day; and to some kinds of stock I believe the medicine would be of great benefit. There are objections, however, to its employment so far as dairy cows are concerned, and I hardly think it would be necessary to physic in the case of grazing stock. If it is deemed advisable to give any opening medicine, the purpose will be fully and efficiently met by the occasional admixture in the soft food of sulphur and treacle.

This, of course, is with the view of lessening any attendant fever. I have not, however, found that there ever is much, the thermometer rarely rising above 102 degrees. Certainly we observe a certain amount of dulness, with staring coat and restlessness for a few days, and occasionally—not always—a slight diminution in the secretion of milk. These conditions, however, are premonitory to the occurrence of the local conditions characteristic of true inoculation, and should not be interfered with. With the decline of the process, there is a very keen appetite, abundant secretion of milk, and great tendency to thrive well.

And now, gentlemen, I think I have said sufficient, and have occupied your time long enough for one hearing. I have left a great deal unsaid; much that I would have liked to bring before your notice, and some of it of the very greatest interest, both as regards the theory and the practice of inoculation. That must, however, be left for some future occasion, by which time I shall hope to meet some, if not all of you, as practisers of this great work, able to sustain me in the declaration which I here make, "That in inoculation we have an agency which, if intelligently applied, is unfailing in arresting and preventing the course of Pleuro-pneumonia, no matter what the conditions are under which it exists."

To some here, and to the profession at large, that, I daresay, will seem a bold thing for me to say. I, however, have had abundance of opportunity of well trying conclusions on the matter, and feel myself quite justified in declaring further, "that so certain and absolutely protective is inoculation in its effects," that I feel confident that, as its practice extends, the dread of Pleuro-pneumonia and the difficulty in dealing with it will become as nothing; and that our profession, in practising it, will, while benefiting themselves, largely contribute to the prosperity of their clients individually, and to the wealth and general good of the country.

After some remarks from Mr. Robertson and Professor Walley, the meeting was brought to a close, and the members afterwards dined together.

February 5th, 1879. J. McFADYEAN, Secretary.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE Annual Meeting and Dinner of the above Society for 1879 were held at the Queen's Hotel, Leeds, on the 31st January, the President, Peter Walker, Esq., in the chair. The following members were also present, viz., Messrs. Jas. and Josh. Freeman, M. E. Naylor, T. Greaves, J. W. Anderton, Jno. Cuthbert, J. W. Ferguson, G, W. Schofield, M. W. Murdoch, J. L. Faulkner, D. Spillman, T. Pratt, Parlan Walker, Professor Axe, J. E. Scriven, Frederick Danby, P. Deighton, Geo. Carter, S. Beeson, and the Secretary. Messrs. W. A. Taylor, W. Dacre, and T. Hopkin, were present as visitors.

Apologies were received from Professor Williams, Messrs. E. C. Dray, Jno. Fryer, J. S. Carter, Jno. Freeman, D. R. Sowerby, J. M. Axe, C. Patterson, W. Lodge, Jno. Schofield, J. Bale, and E. J. Dwyer. The minutes of the previous meeting were read and confirmed.

The SECRETARY proposed and Mr. MURDOCH seconded, the election of Mr. Stephen Beeson, M.R.C.V.S., Harrogate. Carried.

It was resolved that Mr. J. W. Anderton, F.R.C.V.S., of Shipton, be supported as a candidate for a seat in the Council at the ensuing election.

The PRESIDENT read the inaugural address, which was followed by a discussion upon some of the subjects dwelt upon.

Mr. GREAVES was of opinion that a student had a perfect right to further examinations after being rejected three times, as long as he was able to pay the fees, etc. There had been a considerable number of students rejected at the examination instituted lately, and the question was, did these large numbers of rejections arise from the negligence or apathy of the students, or was it in consequence of deficient instruction at the schools? He thought it was the duty of the schools to obtain as many patients as possible, in order that the student might obtain practical knowledge. It would be necessary to obtain a new charter, in order to carry out the arrangements with the Highland Society; this would afford an excellent opportunity for obtaining a penal clause.

Professor AXE said that the question of rejected students had been the subject of much comment lately. The fact was the number of rejections very little exceeded the average; the rejected candidates had invariably amounted to about one-third of the number examined. As to the causes of the rejections, his opinion was that the principal one was, the non-application to their studies, and the general apathy and neglect shown by the large majority of unsuccessful students. He was of opinion that the quantity and quality of the education given at the schools was very large and comprehensive, and therefore any young man who devoted the necessary time and attention to his studies ought to be able to pass the required examination. He thought it was one of the duties belonging to Veterinary Societies to know that the instruction given to students at the schools was of a satisfactory character. With regard to the controversy respecting the apparently low charges for subscribers to the Camden Town School, he begged to remind the members that this was done expressly in order to obtain practical information for the students, and surely the graduates of the school would not desire to curtail the advantages in this respect which they had formerly enjoyed. He was of opinion that the present opportunity was very favourable to endeavour to obtain a penal clause, and he trusted that the various Veterinary Medical Societies would bring pressure upon their Parliamentary representatives to obtain their support in favour of the new charter.

Messrs. CUTHBERT, FREEMAN, ANDERTON, etc., also addressed the meeting upon various subjects alluded to in the address.

A unanimous vote of thanks to the President concluded the business of the meeting.

At the dinner the usual loyal and patriotic as well as professional toasts, were proposed and responded to, and an enjoyable and instructive re-union was passed.

Professor Axe has kindly consented to introduce a paper for discussion at the April meeting entitled "Aids to Diagnosis."

The President's Address.

Gentlemen,—It is with feelings of some trepidation that I venture to assume the dignified position to which you have appointed me, and I can only assure you that it will afford me the utmost pleasure to serve you, and to further the interest of the honourable profession to which we belong. Looking back at the history of the profession for the past eighteen years I have now had the honour of belonging to it, there are many points of interest to which I might call your attention. It is by no means a difficult matter to trace its progress, its failures, and successes, until, landed as we are at the year of grace 1879, we find ourselves enjoying an established position, a distinct recognition of, our status at the hands of the intelligent public, with a growing determination within the profession to consolidate its forces and establish more firmly our rights and privileges. It is quite true there are difficulties standing in the way, prejudices, misconceptions, and abuses to be confronted, but we need not fear them if we only approach the consideration of all matters brought before us with a determination to bear and forbear, and with a loyal desire to individually and collectively handle anything which injures or interferes with the position of the Society and its members, and if we do this, I am sure the records of the forthcoming year will not be barren of good work. Gentlemen, I crave your earnest assistance and support, and above all your candid, outspoken spontaneous expression of opinion in all discussions that may take place. Let us get rid of that morbid reluctance to speak, from fear of attracting a little interest here and there. If any one has an abuse to complain of, or is aware of anything against the credit or interest of the profession, let him out with it.

These are energetic words, but well meant, and if carried out with your assistance something tangible must be the result. There are two or three matters now before the profession which are likely to considerably benefit us and are well worthy of consideration. One is the present and amended mode of electing members for the council in London which has been in operation for some time, under which provincial nominations may be made. This opens out an opportunity for the country practitioners to have their views represented at the central board; this is a valuable change, and I think that if we only take care to make a judicious selection of representatives, much good may be done in removing any misapprehensions or disabilities, under which we may have had to labour, and the evil of what we have deemed a too centralising influence in the profession corrected. At the last meeting of council there was a discussion on the 37th clause of the bye-law, which, as you are aware, provides that no student shall be allowed to present himself before either section of the board of the Royal College of Veterinary Surgeons for his first, second, and third examinations more than three times. I consider this a most objectionable rule, and likely to create a division in the now united profession. I regret Mr. Peter Taylor's amendment on that clause was rejected, although the smallness of the majority showed that there was a strong feeling in the council in its favour. I consider the principals of the schools are the best judges upon such a question, I believe also that students are admitted to the schools too young; inasmuch as not a few received their

diplomas while yet in their teens. It would be more satisfactory to the teachers and advantageous to the students if they were nearer their majority before entering the schools.

Another matter which is likely to engage our attention during the year, is that of the Penal Clause—a subject which was brought so prominently before you fifteen months ago by a near relation of mine, that I need not now refer to it at any length, but which in its ramifications must greatly affect the constitution of the profession. It has received considerable discussion and attention, and I think there can be no two opinions as to its desirability. Now that the chief obstacle is removed, the Highland Agricultural Society having ceased to grant certificates, another year should not be allowed to pass without strenuous efforts being made to obtain it. Funds will, of course, be required, and I shall be glad to contribute my quota, and I have no doubt the various members of the society will be proud to do the same; so that I trust the question will be speedily taken up. I may here state that the following are the conditions upon which those who hold the Highland Society's Certificate may obtain the London diploma without examination; those who graduated with the Highland Society in 1848 to 1872, one guinea; 1873, two guineas; 1874, three guineas; 1875, four guineas; 1876, five guineas; 1877, six guineas; 1879, seven guineas. These terms are, of course, quite open to all, and I hope every one who does not hold the Royal College diploma will lose no time in applying for it, so that in future we may be one united body.

The next matter which I would notice is one which has lately been going the round of the veterinary periodicals, namely, the examination fees. Private members of our profession in London appear to be placed in a very invidious and unpleasant position, if the statements of Mr. Moore are to be relied on, and I see no reason why they should be doubted. Gentlemen, those statements represent a state of things which I think our profession ought not to tolerate for a moment. Leaving the special case referred to for subsequent discussion, I would add—in view of the "Murdock" case lately tried in a local court, which held that a veterinary certificate covered all kinds of risks and contingencies which might happen to a horse—that I think the examination fee should advance *pro rata* with the value of the animal, that is to say, if a horse is worth £50, half-a-guinea for an examination, exclusive of journeying and travelling expenses, and half-a-guinea extra for a certificate. If the horse is worth £100, one guinea for examination, with half-a-guinea for certificate. I may just say, in passing, that the Murdock case was one of great hardship to our friend, and certainly one in which any member of the profession might have got involved under similar circumstances.

There is one other subject I would like to say a few words on, and that is the *Dick Testimonial Fund.* I think every member of the profession ought to be proud of the late Professor Dick, and to approve of any mode of perpetuating his fair fame. It may not be generally known what he accomplished for the profession. In considering anything that he did, we must look at his humble origin, and the state of the profession when he came to its rescue. When we do so, and realize the opportunities that by his exertions were given to now prominent members of the profession, the unfailing and indomitable perseverance he displayed in grappling with the almost insurmountable difficulties he had to encounter through the imperfect knowledge then existing of the Veterinary Art, and the obstructions he met with, we can only stand amazed at the work he did in founding his College, and carrying it on to success. Where do you find a parallel to such devotion to a cause? I refer to this, because I feel that the profession has not done itself credit in allowing honour to whom honour is due to remain so long neglected. Many once hard-fisted mechanics are now, through his instrumentality, living in influence

and affluence, who would otherwise have been between the bellows and the anvil—a position from which he himself sprung. Gentlemen, I would be extremely glad to bring about a revived interest in this matter, and will adopt any course that may be suggested to that end.

Gentlemen, I have now to thank you for the distinguished honour you have conferred upon me, and as I have already said it will be my endeavour to fill the position satisfactorily—a task which I do not think will be very difficult with the support which I am sure you will all be ever ready to give me. Previous to coming to Yorkshire, I was a member of the Mother Society in Glasgow, and ever since coming to Bradford, I have been associated with you. I have always made an effort to attend your meetings, when not prevented by professional engagements, and I am glad to be able to say that I have derived profit from the various discussions upon the subjects that have been brought before us for consideration. I look back upon my connection with you with great satisfaction, and it only remains for me now to wish you a very Happy New Year. May it be a very prosperous one, and may the Grim Messenger come to no heart connected with us.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

THE eighth General Meeting of the above Society was held at the Medical Institute, Liverpool, on the 14th of February, the President, P. Taylor, Esq., in the chair. There were also present—Messrs. T. Greaves, T. Taylor, W. A. Taylor, T. Hopkins, E. Falkner, and S. Locke, Manchester; R. S. Reynolds, J. Leather, C. W. Ellam, D. Hutcheon, W. Stevenson, and W. A. Wilson, Liverpool; J. Welsby, West Derby; J. Freeman and Sowerby, Hull; J. Carter, Bradford; W. Schofield, Pontefract; J. Storrar, Chester; W. Dacre, Altrincham; D. Rothwell, Woolton; W. Woods, Wigan; W. Whittle, and the Secretary. Letters of apology were received from members unable to attend.

The minutes of the last general meeting having been read and confirmed, as well as the minutes of the second meeting of council that had been held in the interval, containing a *résumé* of the various cases with which the Society had to deal, the President delivered the following address.

Gentlemen,—This meeting has been called to ask you to review our past work, our present position, and to alter or arrange our rules for our future guidance and direction, and the election of office-bearers to fill vacant places.

I meet you to-day with mixed feelings of pleasure and sorrow. We have to lament a great loss in the death of our honourable colleague and Vice-President, the late Gilbert Heyes, of Liverpool. He was an active member of our Society since its formation, and for the last ten years fulfilled the duties of Vice-President. All of us have lost a kind-hearted, honourable, and active friend, one who was ever ready to assist the poor and needy of our profession, and give a helping hand to a professional brother when in distress and difficulty. I hope some kind member of our body will make a a motion that our Secretary be instructed to write a letter of sympathy and condolence to his sorrowing widow in the irreparable loss she has sustained. We have also lost other members by death, and amongst them was the late Alfred Challinor, of Bolton.

Under this dark cloud of affliction, we have a glimmering ray of light in the horizon, which cheers our hearts to advance onwards, with a firm resolution, in the good and charitable work we have in hand. I am more than pleased to announce to you that the first and beneficent legacy of the sum

of £50 has now been paid to the National Veterinary Benevolent Fund; it was left to this Society by an esteemed and noble member of our profession, the late William Field, jun., of London. The inheritor not only of a noble name, but he was a great worker in his time in advancing the status of our profession, and who has by this generous act shown to that profession he so loved the nobility of his nature, by leaving behind a sum of money to be added to our Benevolent Fund. The fact will be for all time to come written in the pages of our history, and be handed down to posterity, that William Field, jun., lived and died to assist our National Veterinary Benevolent Society. He was the first member of our body to leave behind a legacy that will redound to the honour of his name, and be a great and noble example to all future ages, and to the wealthy members of our body, "Do likewise"—for it is to provide for the wants of the sorrowing and poor widows, the kind affectionate orphans, children whose parents were removed from this busy scene when probably in the meridian of life and activity, and also for the helpless, desolate, and oppressed members of our body, and to those who are afflicted by sickness or disabled by accident from following their professional calling.

An example like this I wish in my humble way to place before our profession, as I know there are many more in our ranks who have equally generous hearts, and who have also ample means for doing good to our noble Benevolent Society. Gentlemen, there was some little legal difficulty respecting the late Mr. Field's legacy to our Society, and the matter was referred to a court of law, and decided in our favour. We are much indebted to Matthew Harpley, Esq., F.R.C.V.S., and Veterinary Surgeon to the Royal Horse Guards, for the very kind and courteous manner in which he watched over our interests and advocated our claim. For these services our warmest thanks are due to him.

We have assisted for the last eight years two orphan girls, affectionate and kind children of the late George Brown, Veterinary Surgeon, of Pendleton. It affords me much pleasure to be able to state that the large amount of £902 13s. 1d. is placed to our credit at the bank, on behalf of the Benevolent Fund. We have also in hand a cheque for £50, besides some annual subscriptions and entrance fees. This fund, as you are well aware, is held in hand for the special purpose of rendering assistance to those of our Society who are in need. No doubt, you will have seen a case in the November number of THE VETERINARY JOURNAL of last year, wherein the Editor kindly said the Benevolent Society might show their generous conduct. But we have rules to direct the office-bearers, the person named was not a member of our Society, but if you think you can conscientiously bestow a charity, I commend it to your notice and kind consideration. I know that I shall be met with an answer, that we must be guided by the rules. I know that; but I do think that a bestowal of a charity in a good cause and to a professional brother in need will redound to our honour, and carry to the ranks of our profession who are not members of our body a salutary feeling to join such a good and noble Society.

Respecting the Defence branch of our National Society, the industrial part of our Society. Industry is a noble thing, being the energetic engagement of the body and mind in useful employment. Even benevolence depends upon industry. Labour with your hands at the things that are good that you may have to give to those that need it. Therefore you can see how harmoniously the two branches of the Society work together for each other's mutual advantage. Your office-bearers and Council have had arduous, difficult, and delicate duties since we last met. Here in Liverpool we attended many times and arbitrated two large claims, settling them at a cost to the Defence Society of £66 12s.

About the close of last year we visited Middlesborough and Leeds three times, and defended a case in the County Court at Leeds, and this case cost us £38 18s. 4d., making a total cost for the three actions defended by this Society of £105 10s. 4d. The Leeds case was peculiar and intricate, you will have seen it in our VETERINARY JOURNAL: it is one which places upon record that a professional man is considered an expert in that particular branch of science he represents, and is actionable at law for a sum of money if he conscientiously gives an opinion which would be at variance with two of his brother experts.

We have an able and judicious member in our Council who considered that we were entitled to our opinion, and unless it could be proved that carelessness or negligence existed in coming to that opinion, we had a right to give it, and would not be actionable in a court of law. But this case proves that opinion to be fallacious.

Although we lost the case, the plaintiff, who sued for £50, only got a verdict for £15. We feel a little humiliated but not disgraced or dishonoured as the Judge exonerated the professional witnesses from all impure and unjust motives.

A great number of other cases have been arranged and settled by the tact and wisdom of your Council and officers; besides, many cases have had our united opinion as to the advisability of coming to an amicable settlement or as to the most prudent course to pursue, although those involved were not members of our society.

I cannot speak too highly of the great and efficient services rendered by my brother office-bearers and the attentive intelligence your Council have bestowed on all cases brought before them, as well as the care with which they have guarded the interests of your Society, and those of the aggrieved parties.

Unjust and excessive demands will be made, but in all cases let us seek to conciliate conflicting claims by justice and equity—not by law—as it has been said by Pope:—

> "Honour and shame from no condition rise;
> Act well your part, there all the honour lies."

The PRESIDENT proposed the following alteration of Rule 2: "That the entrance fee for new members shall be £5." This proposition was seconded by the SECRETARY.

An amendment made by Mr. W. A. TAYLOR, seconded by Mr. T. HOPKINS: "That the entrance fee be £2 2s.," led to a considerable amount of discussion; but the original motion was ultimately carried, with the addition that the increased rate should not take effect before the first of January, 1880.

The following proposed new rule was withdrawn: "That no one shall be defended until he has been six months a member of the Society."

The PRESIDENT then proposed the following new rule, which was seconded by Mr. J. LEATHER, and carried.

"It shall be incumbent upon a member having reason to suspect a client of intentional ill-will, or in the event of a dispute, to call in one or two professional brothers to advise upon the case; and, if immediate dissolution be likely, to value the animal in question, and after death attend a *post-mortem* examination. The written opinions and certificates of the professional men called in to be sent to the President or Secretary."

Mr. GREAVES proposed the following new rule, which was seconded by Mr. WHITTLE, but afterwards withdrawn.

"In any case the members shall show a disposition to assist and conciliate the owner, and the officers of the Society shall have a discretionary power to have an interview with the plaintiff with a view to settlement."

It was then proposed by the PRESIDENT, and seconded by Mr. GREAVES, "that Mr. R. S. Reynolds, of Liverpool, should be elected Vice-President or the Society, in place of Mr. G. Heyes deceased."

This was carried unanimously.

On the motion of Mr. WOODS, the Secretary was directed to transmit a letter of condolence to Mrs. Heyes on her great loss, and that the same be entered on the minutes of the Society.

A vote of thanks to the President for his services in the chair terminated the proceedings.

GEO. MORGAN, *Hon. Sec.*

CENTRAL VETERINARY MEDICAL SOCIETY.

THE ordinary meeting was held on January 17th, 1879, the President in the chair.

The SECRETARY showed a specimen of a calculus, the chief constituents of which were a combination of every kind of calculi: viz., oat-hair, triple phosphate, and crystalline. The subject was an aged job-horse, who passed no fæces during six weeks others than he removed. The existence of the calculus was assumed, but could not be detected. On death from rupture the calculus was found to have reached to the commencement of the rectum. He also showed a kitten having a double body and eight legs. He likewise referred to a case in which he had successfully removed the elongated portion of a tooth on one side, and chipped away eleven pieces from another on the other sides by the aid of Thompson's shears. He did not cast the horse.

The PRESIDENT next referred to his experiments for determining the nature of the skin epizootic, and stated that since then an eruption very similar to the disease had developed in the inoculated horse, generally affecting the thighs as well as the selected part; and that in another case the use of a contaminated rug had yielded no positive result. In another experiment, believing that heat and moisture were essential, he had submitted an animal to exertion while clothed with a contaminated rug, when it became the subject of the disease. He had set himself to discover whether there were parasites in the disease, and without speaking too positively might say he had found a vegetable parasite.

Mr. HILL (a visitor) stated he had a number of cases in his district, and regarded it as a low form of "ringworm," treating them with mercurial ointment and Zinc Oxyd; he had also observed it in the stable where there was an absence of heat, and again in horses exercised in a straw yard where they perspired after exercise.

Mr. MOORE, Sen., wished to know from the Chairman when the eruption appeared. So far as he had seen, it much resembled equine pox, and its contagiousness supported that theory. It affected parts where the rug did not lie. Did it as a fact come from America or Germany? The Germans said it came from Switzerland.

In reply, the PRESIDENT said the first change which takes place was infiltration of the dermis in circumscribed areas, followed by superficial inflammation. The absence of constitutional disturbance did not accord with the idea of equine variola, and as horses in their clothing were often taken to different parts of the country, infection was easy. If it could be shown to have been introduced here by American purchasers, as some large buyers say, it would become a matter for the consideration of the Veterinary Department of the Privy Council. It was a fact that its spread and extent were closely related to traffic in Canadian horses.

Messrs. Charles Sheather and Thomas Chesterman were duly elected, and the meeting adjourned. Present nineteen fellows and five visitors.

The next meeting was held on February 6th, at 7 p.m. Mr. Charles Sheather related a case of rupture of the lesser curvature of the stomach—a sequel to Colic. In the later stage of treatment he gave charcoal in a draught, which was returned by the nostrils. He repeated it, and watched the horse. The vomiting continued until death. In the autopsy there was found muscular rupture, and the stomach contents were fluid. The discussion was more on the negative evidence of prior disease the parts offered, and the possibility of vomition. Mr. F. J. Mavor gave an instance of vomition in a horse, followed by recovery, and Mr. Hancock mentioned two others. Mr. Sheather ascribed death to over-distension. Mr. Fleming alluded to instances in which horses die from eating the soil when on the picket-lines, and produced two parcels of pebbles and rough stones which had been vomited and voided by a dog belonging to the Baroness Burdett Coutts, these being constantly swallowed by the animal. One day he was confined and watched, when in the course of twenty-four hours he voided these quantities of stones weighing 9 oz. 1 dram; the dog, which weighed 22 lbs., was alive and well. Mr. Fleming was unaware of any case where so many were passed in so short a time. Professor Pritchard confirmed this statement, having also seen the dog. Mr. Fleming also showed some ancient horse-shoes; one, obtained from York, belonged to an early Roman period, an undulating bordered shoe with a wide cavity for a large-headed nail; a curious fact being that these shoes are all of one size, four inches, which served to prove the smallness of the horses. Other specimens he showed were found deeply buried in Hendon, and dated probably from the thirteenth or fourteenth century. Also another shoe—a barbarous one—terribly concave, he marvelled how it could have been used. Also exhibited a double headed foal (head portion) in which the middle right and left orbits were fused, as it were, but the eyes remained independent. Such monstrosities were common in the cow. The shoes were handed round and well examined—the rough shaped shoe giving rise to some discussion. Mr. A. Charles had a curiosity to show, it being the penis of a whale; he believed there were only two others in the country, they being smaller and deposited in the R.C.S. This measured six feet nine inches, and weighed, being dried, between ten and eleven pounds; its age and history were unknown, it having been brought by a sea-captain; he had no doubt of its genuineness, and should present it to the R.C.V.S. Mr. A. Broad showed the two fore feet of an aged pony which, for five or more years, had suffered from navicular lameness, and had worked until it was destroyed from motives of humanity. The ossific matter was mingled with the fibrous flexor pedis tendon. In the other foot the disease had proceeded to ulceration. He considered the specimen unique.

After the consideration of this specimen, as the evening was well advanced, it was agreed to hold over the President's intended communication, and call another meeting the following week to receive it. The meeting then adjourned. Present seventeen fellows and two visitors.

JAMES ROWE, *Hon. Sec.*

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

ON the 16th January, the half-yearly meeting of the above association was held at the Norfolk Hotel, Norwich, A. H. Santy, Esq., F.R.C.V.S., the President, in the chair. Amongst those who honoured the meeting with their presence, were T. W. Crosse, Esq., F.R.C.S., Thomas Greaves, Esq. (ex-President R.C.V.S.), George Fleming, Esq. (Editor VETERINARY JOURNAL), and J. D. Allman. Esq. There were also present Messrs. F. Low,

G. G. Whincop, L. Butters, W. Shipley, J. D. Overed, E. Barker, W. Ellis, T. E. Augur, F. Case, S. Smith, D. Rattee, H. Buckingham, W. J. Bower, and G. C. Hunting, jun. Letters of apology were received from Professor Pritchard, Professor Williams, Messrs. Cartwright, Hutcheon, Bushman, King, Hammond, Newson, etc. The minutes of the last meeting having been read and confirmed, and the auditors' report received, George Fleming, Esq., was elected honorary associate, and the following gentlemen members of the Association: Messrs. R. Tayler, Colchester; W. J. Bower, Rudham; A. Holl, New Buckenham; S. Barker, Aylsham; H. Buckingham, Harleston; and G. C. Hunting, Halvergate.

The PRESIDENT then read a brief inaugural address, in which (amongst others) the following subjects were introduced and discussed: The Contagious Diseases (Cattle) Act; the supplemental Charter; the Apprenticeship Clause; and the direct representation of the Association in the Council of the Royal College of Veterinary Surgeons, which elicited the warm approval of those present. Thomas Greaves, Esq., was next introduced to the meeting, and that gentlemen read a valuable and able paper on "Germs, their influence in propagating disease, and Disinfectants, their influence in preventing disease, and in modifying its spread." The subject was treated by the essayist in a most scientific manner, and gave evidence of profound and deep research, in which the opinions of the foremost scientists of the day were freely reviewed and criticised. He showed that the theory of germs producing disease had opened up an entirely new field of pathological investigation, which was of the highest possible interest alike to the student of Medical, and Veterinary Science, and although he admitted we were at present only on the threshold of inquiry as to the action of germs, yet nevertheless he predicted, when our knowledge of the subject became more perfect, that most important and valuable results would follow, both as to the treatment, and also (what was of scarcely less importance) the prevention of disease. A most animated discussion followed the reading of the essay, in which Mr. Fleming (the able editor of THE VETERINARY JOURNAL) took part, and contributed much valuable information, both scientific and practical, on this most important and deeply interesting subject, to whom, as well as to the essayist, a cordial vote of thanks was accorded by the members, who were unanimous in expressing a hope that the visit of those gentlemen would be repeated at no far distant day. A similar compliment having been paid to the Chairman and other officers of the Association, the meeting broke up. The members and friends afterwards dined together under the presidency of Mr. Santy, and spent a very pleasant evening.

The President's address and Mr. Greaves' essay are annexed.

J. D. OVERED, *Honorary Secretary.*

THE PRESIDENT'S ADDRESS

Vice-Presidents and Gentlemen,—In opening this, the first meeting in my year of office as President of the Norfolk and Eastern Counties Veterinary Medical Association, I am expected to make a few remarks; but shall content myself on this occasion with as few as possible, and those of a brief nature. Most of you are aware that this association was established just ten years since under the presidency of the late W. Smith Esq., F.R.C.V.S., of this city, and from various causes it slept for eight. My principal object in trying to resuscitate it was to bring members of the profession better to understand each other, and in each other's society on neutral ground to rub off those angles which do occur in professional life; also to enable us to remember that we still are students, and ought to remain such to the end. The ever restless

wave of science shows so many varied hues and forms that it is impossible for any to stand and say, I have learned, I know!

I will draw your attention to a few subjects which I think, as individuals and as a body, require our special attention.

The Contagious Diseases (Animals) Act;
The New Charter; The Apprenticeship Clause;
Direct representation of this Society in the Council;
Consultation with Non-Qualified Men;
Professional Etiquette.

Firstly, with respect to the Contagious Diseases (Animals) Act. It must be obvious to the profession and the Government that it was very necessary to include in the Act the disease known as Swine Plague, it being a most infectious disease killing vast numbers. Not long since Mr. Butters had some correspondence with a Veterinary Surgeon in the North of Scotland, stating that some pigs bought on Norwich Hill had conveyed the disease to a distillery there, and the consequence was that a hundred of the animals fell victims. I am of opinion that Splenic Apoplexy and all Anthracoid diseases should be included in the Act.

In speaking of the new or supplemental Charter, it would be well for young members of the profession not to lay aside their books and studies, but diligently to read the former, and by so doing keep up the latter, that they may attain the higher degree after the prescribed time; for if they neglect so to do, they will not in ten years' time be eligible to become members of the Council or of the Board of Examiners.

The Apprenticeship Clause.—It is very important that no student should be admitted to the Royal Veterinary College, or any of the colleges unless he has been a pupil with some qualified practitioner for two or more years, and prove the same by indentures properly and regularly signed; for no matter how well read, how scientific a man is, or how many degrees a man has, if he lacks practice—that is, if he cannot reduce his knowledge to action and smartly do the numerous operations that present in every day routine, he will not shine as a Veterinary Surgeon. And such proficiency can only be gained by early training, for nothing is likely to cast more discredit on our profession than to see a man perform his duties with a want of knowledge or in a slovenly and bungling manner. If this clause were enacted we might say with "Senex" in THE VETERINARY JOURNAL for December, 1878, that our examiners on the practical Examining Board would be able to sign the diplomas without fear or trembling, equivocation, or mental reservation of any kind.

Direct Representation of this Society in Council.—Would it not be advisable that we as an association should endeavour to be represented in the Council direct, by sending some one we know and who we could depend upon for supporting our views? I am glad to learn that the Royal College of Veterinary Surgeons and the Highland and Agricultural Society of Scotland have come to an amicable understanding. I see nothing now to deter us from soon getting the penal clause if we all put our shoulders to the wheel, if the whole profession rose to its own interests as one man and petitioned Parliament to recognise our rights; for I deem it a disgrace to this country that young men of education and talent are deluded into the idea that they are entering an honoured profession, especially when we have the extended curriculum, and at the end of their training, having reached the desired goal and won the prize, they may find the first time their professional services are required that they are confronted with the horsebreaker or groom vaunting the same distinction as themselves, and discover that the charlatan, plumed with their title, can boast of the patronage and appointment of the nobles of our

land. This cannot exist, if you, gentlemen, and such as you, will unitedly claim your rights, and not allow that apathy to remain which has existed so long amongst us. With respect to professional politics, I would petition that every existing practitioner, not a member of the college, be registered under some n.me other than that of a Veterinary Surgeon, and that any one commencing practice under any of the existing names of "Farrier," "Cow Leech," etc., or title of Veterinary Surgeon, not holding the diploma of the college, after a given time, be summarily proceeded against. Then if the public were determined to employ such like, they would do so with the knowledge of who and what they were.

Consultation with Non-Qualified Men.—Are we, as members of a profession, to meet non-qualified practioners and consult; or is it the opinion of the majority that on no consideration are we to countenance them? It is very difficult to draw the line, as many of our clients make a practice of employing such men for minor operations and trivial cases until something turns up which none concerned in expected; we are hurriedly called, and in some cases perforce to consult with the attendant. We cannot refuse when summoned under such circumstances, or if we do perhaps it is a great pecuniary loss. I cannot therefore see our way out of the difficulty under existing circumstances.

Professional Etiquette.—It is most necessary for the great development of our profession that this should be rigidly observed, for if we act as and treat each other as gentlemen, so will the public learn to treat us. I think that meetings of this kind are very conducive to this end; and, finally, may we learn to maintain a Veterinary Surgeon's honour as our own, and be careful not to injure it ourselves or knowingly suffer it to be done by others if we can prevent it, but boldly repel the slanderer of his good name.

Mr. Greaves' Essay.

"Germs," the part they play in the production of some diseases: "Disinfectants," the part they play in preventing and in modifying disease.

Mr. President, Fellows, and Members of my Profession,—Modern science and research unravel many useful problems, make many additions to the comforts and enjoyments of life, and in the domain of medicine and surgery do much to preserve health and battle with disease and death. They have thrown much light on the laws of health; they demonstrate many of those conditions which bring sickness to man and beast; they elucidate the nature of various diseases; and hence ensure greater success in their prevention and treatment. The recent study of germs has especially cleared up some difficult questions in medicine and surgery; in surgery particularly, it has led to great practical results. Those active germs dancing in the sunbeam, swallowed at every breath we draw, endowed with wonderful power of reproduction, the great cause of change or putrefaction in organized bodies, is the subject of my address to-night.

Germs.—These may be said to be matter occupying the border-land between living and non-living things; it is life in an utterly structureless state. The germinal or life-producing matter afloat in the air, out of which bacteria, spores and allied low organism originate, exhibits no characteristics which can be appreciated by the microscope, notwithstanding the employment of lenses that will make a single hair appear a foot in diameter, and an object one inch long 250 feet in length. By such instruments we are enabled to make visible organized bodies which were before wholly unknown, and convince ourselves of the existence of other bodies not yet traced; the tangible has taken to a large extent the place of the intangible; we have a clearer comprehension of how creation is worked and developed. It may turn out

that the atmosphere is much more pervaded by this class of bodies than we imagine ; we are only learning to believe in their abundance, and who knows where our learning will stop. It is apparently true that many of these bodies are of a transparent kind, like a subtle essence, they float in the upper regions, live there permanently, and sometimes come down perpendicularly in air currents whilst they are ready to spring into life.

I am deeply impressed with the conviction that we are but upon the threshold of our acquaintance with these marvellous transformations. It is a new history, a new link in the chain of being. We seem in a certain sense to be living in an invisible world. It seems a distinct landmark to our intellectual advancement ; it shows that there is a generation growing up which is anxious to explore the mystery of science.

A short time ago nothing was known of the life-history of these organisms. We find that in the commonest forms assumed by new-born specks of living matter, they are in a measure indestructible. They can live in and resist a higher temperature than would suffice to destroy developed organisms. These germs then may be likened to an acorn, which, when placed in and surrounded by favourable media, ultimately becomes the stately oak tree. In following out these inquiries we are not pursuing an *ignis fatuus ;* there is no delusion, not a shadow of a doubt about it. The practical point is this: though the air, as air, is pure and innocuous, unfortunately it ever contains suspended in it organic dust, particles and germs, which, when brought into contact with an infusion of moist dead vegetable or animal matter of suitable temperature, such infusion becomes turbid immediately and swarms with living organisms called Bacteria—500,000,000 are assumed to exist in a single drop of stagnant water. It is proved conclusively that this life-giving principle is altogether distinct from the oxygen or any other constituent in the air. It is an essential condition that there must be living germs, or no living organisms can possibly be produced. In some localities they abound to a greater extent than in other localities; there is no known atmosphere entirely free ; and whenever they come into contact with dead animal or vegetable matter in a fluid or semi-fluid form at a suitable temperature, for which they would seem to have a strong affinity, almost instantly it is perceived that low organisms begin to exist.

In order to give us a clearer light on this subject, it must be borne in mind that atmospheric air consists of oxygen and nitrogen, carbonic acid and aqueous vapour, in definite proportions. The atomic theory shows that these proportions must of necessity be exact, or it would cease to be atmospheric air; that it presses with a pressure of 15lbs. to the square inch. We know it is a mixture, it obeys the law of diffusion of gases, that is, the atoms are mechanically held together, but that the atoms move upon each other with such facility that anything can permeate it; a bird can fly through it, rain can pass through it, mists and fogs can be suspended in it. It would appear that these germs are retained in a state of suspension in the interstices between the atoms of the air. This is proved in a variety of ways ; Professor Tyndall has experimented in every possible way for the last two years with nearly ten thousand flasks filled with various infusions. He was determined to recognize nothing that was not tested over and over again with undeviating accuracy ; he found when he exposed these infusions to the atmospheric air in some localities that the infusions retained their transparency, and not the semblance of life took place in them, though they were exposed for weeks and months ; whereas other flasks of the same infusions were exposed to the atmospheric air in other localities, they became turbid and in two days were swarming with bacterial life. There was no doubt or uncertainty about these results ; the conclusion was absolute and imperative that it was not atmospheric air, but something that existed in the atmospheric air, which produced the organisms

observed. Neither did they exist in the infusion itself from pre-existing germs or pre-existing organisms. Now these germs may be quite innocent germs; they may exist in countless multitudes where contagious diseases are unknown as well as where they are rife, but if they are conveyed into the system of an individual who is in an unhealthy state, whose secretions assimilate the infection at the time, they are capable of generating fever and inflammation. I beg you to distinctly understand me, these germs cannot produce Small-pox, Typhus Fever, or Cattle Plague; they must not be confounded with the germs of infectious or contagious diseases; these latter germs can only emanate from organisms suffering under those special diseases. These latter may be transmitted by the breath of an affected person, or by the exhalations from the skin, or from the various excretions. The contagion of some contagious diseases is so subtle that the breath of the diseased organism contains numbers of potent particles of poison, and in this manner the air of a considerable space or even district may become infected with the living diseased germinal matter. This material substance we call germs; they pass from the diseased to the healthy organisms, there they thrive and multiply and produce their kind as all living things do, and that nothing that does not live has been proved to be capable of doing; it is therefore living matter. This living poison may be introduced into our bodies in the air we breathe, in the water we drink, in the food we eat, or by the pores of the skin.

There are material poisons which do not change or increase in their virulence, such as arsenic and the like compounds; but if the 100,000th part of a grain of the living poison is preserved, if even a single seed is allowed to rest undisturbed in some congenial nest, although it may not germinate at once and may lie hid for months or years, yet at the end of that time whenever the season or circumstances become favorable to its development, it may suddenly spring into life, begin to grow, and if unchecked it will rapidly spread abroad and carry destruction and death through entire stables, and even whole districts. Some authors affirm that whenever material or mineral poison is taken into the system in excess, viz., to the verge of destroying life, in a constitution of great strength of vitality, its effects upon the system, although not fatal at the time, are such that sooner or later death must result from it; but if the poison be of a vegetable nature or germs of disease, the dose or doses taken to the verge of destroying life, if the constitution is strong and can live it out at the time, the constitution will rally, and all traces of the poison, or effect of the poison will sooner or later entirely disapear. But this is not always the case; as an example, Mr. Henry M. Stanley, the African explorer, is now laid up in Paris suffering from the effects of malarial fever caught in the swamps of Africa years ago; he is yet thin and weak, and recovers so slowly that he is despondent at times of ultimate convalescence. I have said that infectious disease can be taken by inhaling the germs floating in the air; nor can this be wondered at if we only contemplate the extremely delicate texture and intricate mechanism of the lungs. When we find that in ordinary breathing about 20 cubic inches, or two-thirds of a pint of air enters the lungs of a man at each inspiration, that one or two thousand gallons of air are brought daily into contact with the blood, the whole of the blood in the body is presented to the air in the course of less than a minute of time about one thousand times a day, the air passes over these soft flexible bags called air-cells formed of a membrane 3000th of an inch in thickness, not much thicker than the film of a soap bubble (the lungs of a full-grown person, physiologists inform us, contain six hundred millions of them); by a process of endosmosis the oxygen (and in all human probability, germs also) enter the blood, they are at once embarked in a number of little vessels called corpuscles, 3000th of an inch in diameter (physiologists tell us there are over three millions of them in a single drop of blood). As to the minuteness of some

of these organisms met with, I may mention that the organisms of the pollen of flowers, which produces hay fever, are so small that it would require thrity-seven millions to weigh one grain, or six millions of particles of pollen of our English meadow grasses. These minute organisms and the white corpuscles of the blood are known to be capable of passing through the walls of capillaries.

(*To be continued.*)

Army Veterinary Department.

Gazette, February 18.

ROYAL ARTILLERY.—Veterinary Surgeon of the First Class J. Ferris is placed on temporary half-pay.

Gazette, February 28.

VETERINARY DEPARTMENT.—Veterinary Surgeon First Class William Hall, from the 1st Dragoons, to be Veterinary Surgeon First Class, dated March 1st, 1879.

Gazette, March 14.

VETERINARY DEPARTMENT.—John Thomas Dibben, gent., to be Veterinary Surgeon on probation, in succession to Veterinary Surgeon First Class G. Evans, M.D., promoted from Royal Artillery: dated March 15, 1879.

Gazette, March 21.

VETERINARY DEPARTMENT.—Veterinary Surgeon First Class W. A. Russell, ftom the 14th Hussars, to be Veterinary Surgeon First Class.

In India First Class Veterinary Surgeon A. E. Clarke has been detailed for duty with the Kuram Field Force. Veterinary Surgeon W. A. Crow has been ordered to Mean Mear for duty with the Royal Artillery.

During the recent military operations in Afghanistan, the loss in animals has been extremely great, and we can scarcely wonder at this when we know the difficulties the different columns had to encounter, and the almost entire absence of veterinary organization. It appears to be impossible to get the Indian authorities to recognize the necessity for this important organization either in peace or during war, and their neglect is likely to cause the country heavy loss, in addition to the delay and embarrassment it has already occasioned in the field operations. There are nothing but complaints on every side as to the way in which veterinary surgeons are treated in India, and as a consequence, service in that country is avoided as much as possible. Volunteers there certainly are none, nor are there likely to be until affairs are greatly altered.

The Indian papers have taken up the subject, and have commented in strong terms on the state of the Veterinary Department in India, and the absence of volunteers for service in Afghanistan. One paper, in the course of its observations, says: "The 'only one' officer alluded to who has volunteered for Indian Service, is First Class Veterinary Surgeon Steel, 16th Lancers, who on landing finds himself told off to executive work usually allotted to the juniors of his department, while there is no administrative Veterinary officer with the Division to which he is attached. In the Continental armies there is always an administrative Veterinary officer attached to each Division in the Field, but in India it does not seem to be worth while to do this. No attempt, however, has been made to supply the Divisions with administrative veterinary officers, and the Royal Veterinary Warrant, published in England in April last, is still a dead letter in India."

The Indian Government does not appear to be very enlightened with regard to the requirements of modern armies, and it is fortunate indeed that it has only uncivilized, undisciplined hordes of Afghans to contend with. But even then the preventable losses sustained—not to mention the cruelty inflicted on animals through lack of veterinary supervision and assistance—do it no credit. Closer contact with Russia, and the lessons derived from the present campaign may, however, eventually rouse it to a sense of its duty and the necessity for attending to its Veterinary establishment.

Obituary.

THE Registrar of the Royal College of Veterinary Surgeons reports the following deaths :—

Mr. Robert Page, of Bishop Morchard, Devon, who graduated in 1836.

Mr. Matthew B. Brake, M.R.C.V.S., of Northampton, a graduate of 1845.

We have been much pained to receive intelligence of the death of Mr. T. J. Lang, First Class Veterinary Surgeon, Royal Artillery, who died at Peshawur, *en route*, we believe, to the Afghan frontier. Mr. Lang left England for India only a few months ago.

Notes and News.

TRICHINOSIS IN GERMANY.—TRICHINÆ IN PORK.—According to a report just issued by the Prussian Minister of Agriculture the number of pigs slaughtered in the Kingdom of Prussia in 1878 was rather more than two millions. Of this number the official inspectors of meat found that one in every 2,800 was affected with trichinæ. This showed a considerable improvement on 1877, when as many as one in every 2,000 pigs were suffering from *Trichinosis*. Trichinæ had also been discovered in American salt pork and in the smoked uncooked sausages of Brunswick. There had been several outbreaks of the disease among the inhabitants of several provinces and cities where uncooked ham, bacon, or sausages, or underdone pork had been eaten. The frequency of this dangerous and agonising malady has continued to engage the attention of the Imperial Government of Germany, which intends shortly to bring before the Imperial Parliament a measure to insure a more stringent microscopical examination of all pigs slaughtered. The number of persons known to have suffered from Trichinosis in the same year was 138.

RINDERPEST AND SMUGGLED CATTLE.—The *National Live Stock Journal* states that an Austrian landed proprietor, and member of the Austrian Parliament, in a speech in that assembly, said :—At Elizabethgrad, in Russia, you find 15,000 to 20,000 head of horned cattle collected in one point—healthy, suspected, and diseased, all thrown together. From this market the cattle are sold to Austria, while the diseased cattle are smuggled over the frontier. And that it pays to do so is proved by the fact that in Galicia there exists an anonymous insurance society, with a capital of more than a million florins (500,000 dols.), for the insurance of diseased cattle smuggled into Austria.

FILARIA SANGUINIS IN THE DOG.—We have on several occasions alluded to the occurrence of the *Filaria sanguinis* in the dog in tropical and semi-tropical countries. In the *Lancet* for March 1st, Sir J. Fayrer publishes a letter from a medical gentleman, which may be of interest to our readers, in connection with the subject of blood entozoa.

Medical History and Post-mortem of a Terrier Bitch at Rassa Station Hospital, Sunghie Ugong, Straits Settlements.

History.—Weight 30 lb.; age 4¾ years. Had four litters of pups; was supposed to be in pup five weeks; had good health up to the time of fatal illness; owner noticed a tumour come and go away again in her neck for three years. Symptoms: Looked dull, and had paroxysms of coughings and attempts to expel stomachic contents for three hours before death; did not succeed in ejecting pulmonary or gastric matters; snapped once when placed in a hot bath. On the same day she wheeled completely round, then fell on her side, breathing convulsively, and died in ten minutes.

Post-mortem examination.—Unduly clothed in fat. Veins of neck engorged and full of clots; tracheal tube healthy and free from foreign body. Lungs congested (venous); specific gravity, however, unaltered, sections floating in water; when cut the surfaces exuded frothy serum and mucus. Œsophagus healthy; no foreign body found, as expected. The cardiac extremity contained a little pulpified food; stomachic contents similar. Mucous membrane and rugæ well defined; hollow viscera healthy (examined to rectum). Peritoneum healthy, but loaded with fatty bands. Liver slightly congested; venous channels dissected for some distance, blood-clot alone found. Kidneys congested. Brain not examined. Arteries generally found empty, veins free of blood-clot (recent). Lungs with heart attached removed from thoracic cavity. Ascending and decending cavæ followed up for some distance, blood-clot alone found. Heart: right ventricle exposed, crammed with recent clot and long white worms; on close inspection the worms were found in close connection with clot and not the endocardial lining. Right ventricular cavity twice the size of left; walls half as thick. No attenuation detected. The clot with worms attached reached about one inch up pulmonary artery. Also in right auricle blood-clot with a large ball of worms were found. Left side of heart nearly empty; no worms there detected, nor in any other part of body.

Causes.—No doubt drinking impure still water, rich in animal and vegetable organisms.

Remarks.—The worms were derived from without, and had an extraordinary affinity for right heart, and though they had no distinct connection with the endocardial lining, they were unaffected as to position by blood's current. No symptoms in life ever indicated embolism or thrombosis; no symptoms of ill-health observed from their accumulation; no pulmonary uneasiness. Queries: How is it they did not migrate? Why did their existence never produce subjective symptoms before the fatal attack? Why is the right heart their habitat? Womb, unimpregnated, 1½ in. long, 1 in. broad at fundus. The worms were about 2½ in. long, like threads, and rolled together in a round ball-like accumulation. They were sent for microscopical investigation, were neglected, and lost.

Correspondence, etc.

OUR FEES.—HONEST COMPETITION.

To the Editor of the VETERINARY JOURNAL.

SIR,—I shall feel greatly obliged if you will give insertion to the following correspondence in your next number.

Camden Town, N.W.,
February 6th, 1879.

DEAR SIR,—Will you kindly be present at the meeting of the Central Veterinary Medical Society this evening, as I propose to direct the attention of the society to a personal matter in which you are interested. If you will

bring with you the letter addressed by Professor Simonds to Mr. Reddin, referred to in the VETERINARY JOURNAL for January, I should esteem it a favour. I am, etc.,

Mr. T. Moore. J. WORTLEY AXE.

11, Upper Berkeley Street, W.,
February 8th, 1879.

DEAR SIR,—I am in receipt of yours of the 6th inst., in which you ask me to attend the meeting of the Central Veterinary Medical Society, and bring the letter written by Professor Simonds to Mr. Reddin.

A most regrettable cause prevented me attending the meeting; but had I been present I should have objected to your entering into the subject, as the rules of the society prohibit any discussions of the kind. It appears to me that you ended the personal matter, as between ourselves, by needlessly handing my letter of December 18th, 1874 to the Principal of the Royal Veterinary College, instead of replying to it yourself, and I must therefore, at this distant date, decline to accede to your request to re-open it.

I am, etc.,

Professor Axe. THOMAS MOORE.

P.S.—I shall send this to the VETERINARY JOURNAL.

In your last number, "A Student" contributes an exceedingly puerile and vulgar tirade against myself. I am sure his time would be better occupied in attending to his legitimate studies, and I would recommend him to master the controverted points instead of heedlessly rushing into print to expose his ignorance. I am, etc.,

February 15th, 1879. THOMAS MOORE, M.R.C.V.S.

[We regret that the above correspondence was pressed out of our last issue, in consequence of the great demands upon our space. Willing, indeed anxious, as we always are to allow every one to express himself freely with regard to matters relating to the profession, and especially with a view to the exposure and suppression of abuses, it must nevertheless be obvious that our correspondents must observe the rule which excludes the introduction of too acrimonious and personal attacks, which do not promote, but rather hinder, the redress of wrongs and grievances. "Honest Competition" has, for the present at least, been sufficiently discussed.—ED. *V. J.*]

GREENACRE *v.* CARLTON.

To the Editor of the VETERINARY JOURNAL.

SIR,—I have read with interest the case of Greenacre *v.* Carlton, decided in the Wymondham County Court; but it loses a great deal of its importance as regards Veterinary Jurisprudence, by not giving more details to show how Messrs. Holl and Auger, Veterinary Surgeons, arrived at the conclusion mentioned. I, for one, will feel much obliged if they would give more particulars. Yours faithfully,

Edinburgh, *March*. W. REEKIE.

"RIG" CASTRATION.

To the Editor of the VETERINARY JOURNAL.

SIR,—As there has been a great deal of talk about the castration of "Rig" horses, which subject has been lately brought under our notice by Mr. Miles, I have taken the liberty of making a few remarks on it. In my opinion,

every veterinary surgeon should be able to perform this operation. Some practitioners may say that they do not see why we should trouble ourselves about it, because they have been in practice for many years, and have not suffered much inconvenience by not being able to do it. Most likely not, simply because it was thought that the operation could not be performed; and if a person had a troublesome "Rig," he used to get rid of him at any price. But now it is shown to us that the operation can be performed, we should not rest till we can do it; for most likely unqualified men will learn how to perform it, and if they can do it and the fully qualified men cannot, it will tend to lower the veterinary profession in the eyes of the public. I sincerely hope, however, that all of us would do our uttermost to raise our profession, instead of lowering it. Now I daresay some will ask, How are we to learn how to perform this operation? My answer to this question is, Either find it out for ourselves, which I think can be easily done, or pay some one to teach us. But before going any further, I may mention that having had a good opportunity of seeing the operation performed, I watched the whole process very carefully; though I do not feel justified in stating how I think it is done till I have tried to perform it, which I intend to do at the first opportunity, and if successful, shall be very pleased to make it known to the profession at large. I have heard it stated by Mr. Miles, and also by members of our profession (who, I think, should know better than make such a statement), that it is of no use our trying to perform the operation, as it is impossible to do it without having similar instruments to those used by Mr. Miles. In answer to these people, I will simply say that the operation must have been discovered some time; and whoever first discovered it, I don't hesitate to say, did not use similar instruments to those now in use by Mr. Miles, simply because Mr. Miles has invented many of the instruments he uses, since he has performed the operation. Therefore I don't see any reason why a veterinary surgeon, knowing the anatomy of the parts, should not be able to do it with a little practice, and this can be obtained at a very low cost, either by buying "Rig" horses from the knackers (and when he has done with these, he could sell them to the knackers again for as much, or nearly as much, as he gave for them); or if he cannot get horses in this way, he may know of some one who has a very troublesome "Rig" which he can buy for a very low sum. Then if his operation was successful, he could sell this horse for more than he gave for him; and even if not successful, the animal would not be much the worse for the operation, and he could then sell him at some price. If not successful in his first endeavour he should not be discouraged, but think of the old motto, "*Labor omnia vincit*," and try again.

I noticed in the last number of your Journal a letter on this subject by a certain veterinary surgeon, who, when speaking of the operation as performed by Mr. Miles, says: "the way in which the missing testicle was brought to light was something wonderful." He almost seems to think that there is some kind of magic about the operation; but for my part, I do not see anything very wonderful in it, as I think that, in the majority of cases, the testicle is lodged in the inguinal canal. There are some other operations performed by Mr. Miles, such as "spaying" cows and bitches, which I think quite unnecessary. The latter operation is not only unnecessary, but extremely cruel; and a good deal could be written about such operations, and also that of "spaying" pigs, which from my own practical experience, and also from that of others, I do not hesitate to say is quite unnecessary. But I must not encroach more on your valuable space, for my letter is now much longer than I intended it to be.

I remain, yours respectfully,

"CUI BONO."

THE "FELLOWSHIP DEGREE,"

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I am quite pleased with the letter from Mr. Cox in the JOURNAL of this month and in *The Veterinarian* of last month. The Council of the R.C.V.S. have a most important duty to perform, yet a pleasing one; for they will hand their names down to posterity as being the leading labourers to dig the Veterinary profession out of a quagmire in the nineteenth century: that is, if they do their duty in an honest, impartial manner.

The Degree should certainly be the means to mark its possessor as a fit associate for gentlemen; therefore those admitted should have that culture which develops manners, which maketh man, and man a gentleman.

The matriculation examination, as it was in the first instance, certainly took too high a standard for those in our ranks at this present, and undoubtedly needed modifying. Yet to lower it to such a level that the most moderate member may compete for the Fellowship is certainly throwing the Degree about indiscriminately. Of what value will it be to such men? *None whatever;* and it will only bring contempt down upon those who sign such diplomas as examiners. The Fellow must be a man of superior stamp, one who can present himself as an educated scientific man when in the company of such men, and be able to hold his own in arguments on matters scientific and intellectual pertaining to our profession, or the sister science.

If the examiners fail to obtain this much, then the Degree will fail; therefore it is to be hoped that the Council will give the subject deep thought, and Mr. Cox's letter the attention it deserves.

The matriculation examination of students before entering our schools should, I opine, be conducted under the supervision of the Council, or, better still, an Education Committee; thus allowing a student who may so desire to pass the higher examination for admission to the Fellowship examination after he has had his five years' actual practice. And, moreover, if such a committee existed it would prove a valuable means for preventing the scamps and dregs of humanity from drifting into the profession; for, as matters are now, anything in the image of man possessing 35 guineas can enter the schools, and then, after years of cunning and craftiness, manage to burrow through into the R.C.V.S. either at London or Edinburgh. This should be put a stop to; for how can we expect the profession to attain its true position when such recruits are enlisted? No Charter, Act of Parliament, or Fellowship Degree can make anything else of such men than what they are; neither can these Charters, Acts, etc., make those already with us gentlemen. Unless the foundation be soundly laid and the material of fair quality, the fabric must be wanting in stability.

A meeting of Fellows would be a good innovation—happy thought of Capt. Russell.

I would therefore suggest that a meeting of Fellows be held on the day of the Annual Meeting, at Freemason's Tavern, immediately after that meeting, and a discussion be held on the subject. Those Fellows who feel desirous of maintaining the degree in its integrity and original value, will greatly oblige by notifying the same in a letter enclosing card addressed F.R.C.V.S., care of publishers of THE VETERINARY JOURNAL.

It is to be distinctly understood that Fellows alone are invited.

Yours truly,
ROBERT WARD, F.R.C.V.S.

London, W. *March 18th*, 1879.

P.S. The notice of Meeting will appear in the JOURNAL and *Veterinarian* for May.

CIRRHOSIS OF THE LIVER.

To the Editor of the VETERINARY JOURNAL.

SIR,—In reading over the communication on "Cirrhosis of the Liver" in the Journal for this month, I see that the dose of the subchloride of mercury mentioned is three drams, instead of one dram, the quantity used. Be good enough to give a corner in the Journal for the ensuing month for this correction, to prevent any misunderstanding.

Balloun, Beauly, *March 12th*, 1879.

I am, sir, faithfully yours,
ALEX. GUNN, V.S.

NOTICE TO CORRESPONDENTS, ETC.

SEVERAL Original Communications, as well as reports of Societies, are unavoidably held over until next month.

In consequence of the heavy demands upon our space, we would esteem it a favour if Secretaries of Societies would condense their reports as much as possible, in order to ensure early publication.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from G. Morgan, Liverpool; "Cui Bono;" "Madrassee;" G. A. Banham, Brown Institute; G. Gray, Bakewell; W. Reekie, Edinburgh; J. Webb, Bishop's Stortford; D. Hutcheon, Liverpool; A. E. Macgillivray, Banff; S. Locke, Manchester; R. Poyser, Carabineers, Umballa; T. R. Dudgeon, Sunderland; T. Greaves, Manchester; R. Ward, London.

BOOKS AND PAMPHLETS: L. C. Miall and F. Greenwood, *Anatomy of the Indian Elephant*; G. Thin, *On the Condition of the Skin in Tinea Tonsurans*; G. P. Sanderson, *Thirteen Years among the Wild Beasts of India*; Karl Graff, *Vergleichende anatomische Untersuchungen über den Bau der Hautdrüsen der Haussäugthiere und des Menschen*; O. Bollinger *Ueber eine neue Wild- und Rinderseuche.*

JOURNALS, ETC.: *Wochenschrift für Thierheilkunde; Index Medicus; Annales de Méd. Vétérinaire; Archives Vétérinaires; Lancet; Sanitary Review; Recueil de Méd. Vétérinaire; Allgemeine Militär-Zeitung; Journal of the National Agricultural Society of Victoria; Bulletin de la Réunion des Officiers; United Service Gazette; Farmer; Agricultural Gazette; Deutsche Zeitschrift für Thiermedicin; National Live Stock Journal; Medical Times and Gazette; American Veterinary Review; Der Thierfreund; Der Thierarzt; Nature.*

NEWSPAPERS: *Suffolk and Essex Free Press; Montreal Gazette* (2 copies); *Edinburgh Courant; Coventry Herald; Stockport Advertiser; Asian Sporting Paper.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, VETERINARY JOURNAL, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

MAY, 1879.

"LOODIANA," OR ANTHRAX FEVER, IN MADRAS.

BY "MADRASEE."

As I happened to have a well-marked case of "Loodiana Disease" under treatment when I received the December number of the VETERINARY JOURNAL, I have by this mail sent you, in accordance with your expressed wish, a bottle of blood taken from the animal immediately after death. I fear that decomposition of so large a quantity is inevitable, but capillary tubes are not to be had here, and I send this on the chance of its reaching you in a fit state for the experiments you wish to perform. I hope to get some tubes before I have another case of the disease, and you shall then have a further supply. I may tell you that I found *Bacilli anthracis* in abundance in the serosanguineous discharge from the nostrils during the life of the patient, and in the blood after death; but I failed to find them in the blood taken from the wound made for the insertion of the tube. This is not by any means the first time I have noticed this; indeed, I have never found them in the blood of a living patient, though often in the nasal discharge, which is almost always mixed with blood. At page 88, vol. xvii., of the *Quarterly Journal of Microscopical Science*, is a woodcut, which, on a somewhat larger scale, represents what I have seen largely mixed with mucus corpuscles. I have quite as often altogether failed to find any trace of these forms, but sometimes have observed very minute moving specks which, even with an immer-

sion objective Hartnack No. 10, I could make no more of than something like minute round particles, single and double—never more than double, but all very active and precisely similar to what one sees in any decomposing organic fluid, but these in blood from a live horse. I was much delighted to read the result of your investigations, and regret that I have not before thought of sending you a specimen of the blood to examine. My patient was dosed with Carbolic Acid, but in vain. I have rather a fancy for the Hyposulphite of Soda; but although I have seen recoveries after its administration, as well as that of various other remedies, or perhaps in spite of them, I have no confidence in any line of treatment I have either tried or seen employed by others. As to causes, my experience is that wherever the disease appears there will be found some want of drainage, or saturation of the soil with decomposing organic matter, or some accumulation of such in the vicinity. The grass-cutter's bundle, soaked in some stinking puddle to make it green and fresh-looking, is also, to my mind, a source of danger, and not of this kind only. You ask about cattle and sheep. It is hard to get information on this subject; but I can tell you I have just had to encounter a severe outbreak of Rinderpest amongst the cattle of the Municipality here. I have heard of no Anthrax, but that is no reason why hundreds of cattle may not have died within a few miles of me. Three years ago, when employed by Government to inquire into the causes of excessive mortality of cattle, I had opportunities of making dozens of *post-mortem* examinations, and saw cases of disease which, in horses, I should have called "Loodiana," but I preferred to designate them Anthrax. I also saw the carbuncular form of the disease as described in "Veterinary Sanitary Science and Police," vol. ii., p. 131. Gloss-anthrax is also common. Sheep, too, are frequently sufferers from anthracoid affections; and I was consulted in 1875, in consequence of the death of some natives who had skinned sheep dying of a disease of this sort in the South Arcot District. I find I have by me the description of the disease given by the Tahsildar, and you will see from the copy I enclose that it almost speaks for itself. Looking for it, I came across a description of cattle disease *apropos* to what I

have above stated, and I also enclose a copy of it. It is much to be regretted that Government will not make it worth some one's while to further investigate cattle diseases in India. Mr. Thacker did good work, but there is still much to be done, only Government wishes it to be done for nothing. If I can help by carrying out any experiments, let me know, and I will endeavour to obey instructions. I am certain, before long, to have other cases of the sort, as Anthrax is, I may say, enzoötic here. The catarrhal form of Influenza has given me much trouble here lately, and I hear it has also prevailed at Bangalore, Bellary, and Secunderabad. Simultaneously with the outbreak of Rinderpest above alluded to, Cholera made its appearance in Madras, but happily soon disappeared.*

REPORT.

To C. J. CROSTHWAITE, Esq., Agent, Sub-Collector of Bellary.

The Argi of B. Nursimha Charlu, Tahsildar of Gutty Talug.

I reported in my argi, No. 791 of 30th ultimo, that the cattle disease of a new type which had broken out at Cotteapeta, Congunapully, and Culloomady had ceased, and consequently I was not in a position to report its symptoms from personal observation. Having since learnt that a similar disease had broken out at Ootacul, I proceeded to the village on the morning of the 2nd instant; there were none suffering from the disease at the time, but there was a dead buffalo calf. I saw it, and it appeared to have died of swelling in the neck. I inquired to know the symptoms of the disease. The attack seems to begin with the discharge of saliva from the mouth; then the flanks palpitate, the animal breathes as if bellows were blown, swelling takes place from the liver up to the throat. Breathing through the mouth becomes obstructed, and then the animal begins to breathe by the nose. Death follows in an hour after this stage. One animal died from swelling from leg to neck. Death generally takes place within twelve hours after the commencement of the attack; the attacked never survive. It appears that eleven head of cattle died in this village of Ootacul, viz., three bullocks belonging to one Yeddooladoddy Tummanah. One died of swelling in the legs; it was

* Our correspondent is heartily thanked for his interesting communication. He does not mention the doses of Carbolic Acid administered, but we would suggest the necessity for giving the drug in large quantity and at frequent intervals—say, two to four drachms in a pint of linseed or olive oil, for a horse. This dose may be repeated in from four to six hours. In external swellings, subcutaneous injection of the same medicine, or Tincture of Iodine should also be employed.

Do animals which recover from the disease enjoy immunity from another attack; or if not, is that less dangerous?

Blood carefully dried on a bit of glass will serve our purpose very well, as will also—and perhaps better—a small portion of the nasal discharge. In the bronchial mucus from a horse that died of "Loodiana Disease," and which was forwarded to us by Dr. Evans, M.R.C.V.S., the *Bacilli anthracis* were present in myriads, whereas but few were found in the blood. We would recommend some inoculation experiments—rabbits, guinea-pigs, or mice being most convenient.—ED. *V. J.*

attacked at night and died the next morning. Two died of swelling in the neck; they were attacked in the morning and died in the evening.

Three head of cattle belonging to one Naraina Reddy. They were attacked at night and were dead by the following midday. There was no external swelling. Their tongues were protruding and saliva discharging all the while. The breathing was difficult.

Two belonging to Abala Reddy. These were attacked at night and died the next day. The animals abstained from food; saliva flowed; the flanks were palpitating and the breathing hard.

One buffalo calf belonging to Durgapuri Paravalappah. It was attacked in the morning and died the same evening. Saliva was discharging from the mouth; breathing was obstructed, and the neck was swollen.

One bullock belonging to Vadde Nágú. It died of swelling of the neck, attended with flow of saliva from the mouth.

The animals attacked by this disease remain sometimes standing, and sometimes lying down. They breathe as if bellows are blown, and abstain from food. Saliva flows; the flanks palpitate; at last slight swelling takes place from the liver up to the neck, and death immediately supervenes.

Extract from the Season Report of Chedambarum Talug, for October, 1875.

It appears that there was a loss of 350 cattle from "Veckai" (Rinderpest), Adaipan (Anthrax), etc., diseases in Komaratchy, and eight villages in the Kusba Ferka. As the Revenue Inspector's Report on this is wanting in certain particulars, it is returned and will be submitted as soon as received from him. Further, it is reported that in the village of Thatchakadoo a disease known by the name of "Therian"* is prevalent among the sheep. The sheep of the class known as *Padoovan Adu* attacked with that disease, die at sunrise and sunset. On those who flay such sheep the blood operates as a poison, and the fingers, hands, sides, and belly become swollen. It appears that a man died in this way in ten days; that another was attacked and recovered; that nine others are still suffering from it; that a man of the adjoining village of Aroomoolithevan also died from the same cause, and that seven bullocks and fifty-five sheep fell victims to the said disease.

I will send the usual statement as to the cattle attacked, etc., after inquiring of the village officers. I have issued orders to the village officers to segregate the infected cattle from the uninfected, and directed that no one should flay the dead sheep, or eat the meat, but that the carcases must be buried. I have also directed them to apply the medicine supplied from the Talug.

(Signed) P. VENUGOPÀL, Tahsildar.

[We have delayed publishing the above important communication until some experiments had been made with the blood, which was received in due course, though from its odour it appeared to have undergone decomposition to some extent. This fluid was examined at the Brown Institute by Mr. Banham, but no *Bacilli* could then be detected, though there were many of what appeared to be *Micrococci*, and it was feared that its

* "Padasran" is Foot-rot, and it appears from another letter that the disease above mentioned first appeared among sheep with this disease (*Therian*), but also subsequently attacked others. The symptoms were described as a kind of fit suddenly occurring, and quickly terminating in death.—"*Madrassee.*"

semi-putridity had destroyed its virulency. However, a guinea-pig was inoculated with a small quantity of it on February 5th, and the creature continued in apparent good health until the 10th, when it died—an interval of six days, a most unusual period of latency. An examination was made of blood from the spleen, heart and lungs, and *Bacilli* were found in large numbers, but most numerous in that from the spleen. At the seat of inoculation a great amount of irritation had been excited, and the cutis had become united to the subjacent muscular tissue by a thick fibrous material, the surrounding tissues being infiltrated by a serous exudate.

Some of the blood from the spleen was put into fresh serum and placed in the incubator, in order to discover whether the long *Bacilli* rods would be developed, as would happen if the organisms observed were really the *Bacillus anthracis*. Finding the blood of the guinea-pig so infested with "rods," Mr. Banham was induced to re-examine the blood from Madras. He succeeded in discovering a few "rods" in it, and there appeared to be numerous "spores." The "rods" had evidently been overlooked in the first examination, and the *Micrococci* were, in all probability, anthrax "spores." Another guinea-pig was inoculated on the same day (the 10th March) with the same blood, and it succumbed on the fourth day. The *post-mortem* changes were similar to those noted in the other guinea-pig; though in the blood there were remarkably few rods, though this might be due to the circumstance, as is properly suggested by Mr. Banham, that this fluid was examined immediately after death. The spleen, however, contained numerous rods and spores. Mr. Banham had succeeded in developing four generations of these spores by transplanting them, or inoculating four successive quantities of fresh aqueous humour; and this cultivation might apparently have gone on *sans cesse*. The organisms were the real *Bacilli anthracis*.

This additional evidence as to the nature of the so-called "Loodiana Disease" is full of interest to the veterinary and comparative pathologist; and we may justly claim the credit of having established the fact beyond a doubt. But we gladly share this credit with our many Indian friends, who have so

kindly responded to our request for information, and the necessary material for experiments; no less than with our esteemed colleague, Professor Duguid, late of the Brown Institute, and his promising successor, Mr. Banham.

The scientific co-operation of the members of the veterinary profession alluded to above has been the means of not only finally settling the question as to the nature of a most destructive and obscure disease among horses in India, but of demonstrating that the lethal agent in this malady—a low form of vegetable life—can be transported from the plains of Hindustan, like an exotic plant, be successfully cultivated in this country, and prove as active in its deadly germinating powers in the body of our English animals as in that of the Arab horse, camel, elephant, buffalo, yak, or Brahmin bull. This is a startling result, and one which concerns more than the students of our own particular science. And this addition to scientific knowledge—an addition which may prove of the greatest importance—has not cost the country a farthing; it is the result of individual enterprise and sacrifice for which we cannot expect acknowledgement.

The question of cost rather debars us from carrying our experiments to their legitimate conclusion. The rabbit and guinea-pig are not altogether reliable creatures for inoculation; and it would be more satisfactory if we could resort to the larger herbivorous animals—the sheep and ox, and even the horse—in order to set the question of "Loodiana Disease"—as well as other forms of Anthrax—at rest for ever.—ED. V. J.]

IMPERVIOUS OS-UTERI IN A HEIFER.

BY GEO. GRAY, M.R.C.V.S., BAKEWELL, DERBYSHIRE.

ON August, 16th, 1877, I was urgently requested to attend to a heifer, the property of Mr. Childs, Mattock Green.

History.—Shorthorn; colour white; one year and eight months old; bred by owner; had been put to the bull six weeks, and three weeks previous to my visit; but the act of copulation on both occasions was followed by very unpleasant results: straining, with slight hæmorrhage ensuing, which was so severe

on the latter occasion that the owner determined not to again put her to the male. The day previous to my visit she was observed to be in œstrum, but for the reason stated nothing was done. The following morning she was found amiss, when my attendance was deemed necessary.

Symptoms.—Very restless, and straining incessantly; body bathed with perspiration; respiration accelerated; pulse eighty, and hard. I had my hand well oiled, and introduced it into the rectum to ascertain the condition of the uterus. The volume of the latter would compare with a uterus in the second month of gestation. I passed my hand up the vagina, but was unable to reach the os without causing the animal much pain, which was aggravated by the attendant having previously applied "Duff's oils," or some such rubbish, to the vulva and vagina, greatly irritating them.

Diagnosis.—Retention of the catamenia, probably due to some malformation of the os or anterior portion of the vagina, as no previous disease of the genitals had ever been observed.

Prognosis.—Unsatisfactory. Taking into consideration the high condition of the animal—the vascular excitement present, that an operation would be attended with great risk of blood-poisoning—the weather, too, being favourable to such a sequela—I recommended the owner to have her slaughtered, requesting him to preserve and forward the genital organs, complete, for inspection; this he promptly did. The uterus appeared externally, so far as size is concerned, to be in the second month of gestation. On making a longitudinal incision through the walls, fifty-four ounces, by measure, of a yellowish-looking fluid escaped, having the appearance and consistency of yeast mixed with beer. The mucous membrane of the body of the uterus was healthy, though pale; but in the right horn it appeared to the naked eye to be denuded of its epithelium, with slightly increased vascularity. The left was in a similar condition, but not to the extent of the right. Both ovaries were healthy. The right contained a *Corpus luteum* nearly an inch in diameter, of a dark reddish-yellow colour. The left contained a few Graafian vesicles—one especially far advanced, and almost ripe.

The vagina was healthy and natural; but about an inch from

the os two cicatrices, nearly an inch apart, were to be seen, which, I think, must have been caused by the bull's penis. The os was quite impervious, and, in my opinion, had always been so. The mucous coat of the uterus was as uniform over where the os should be as on any other part; and one could not tell, by looking at the internal surface of the uterus, where the os ought to be. I have the uterus roughly preserved.

Remarks.—I am sorry now I did not at the time have the contents of the uterus subjected to a microscopic examination, to ascertain their real nature, seeing that some of our eminent veterinarians reject the theory of menstruation in the lower animals.

If we accept the theory of menstruation (which I don't doubt), the quantity of fluid found in the uterus was much in excess of what the catamenial flow could have been in the time. Supposing the heifer had begun to menstruate at five months old, and to have come in heat regularly every three weeks up to twenty months (which is not very probable), she would have menstruated about seventeen times; and, reckoning two ounces at each time, this would make thirty-four ounces in all, leaving twenty ounces to be accounted for. Moreover, were the contents of the uterus like what we should expect from retention of the catamenia? On relating the case to Mr. Daniel, M.R.C.V.S., Down Street, Piccadilly, he suggested Scrofula as the cause of such a quantity of fluid. I demurred from this at the time (because all the internal organs were reported to me as being healthy), but recent observations have led me to favour the theory of Scrofula; although, when making the examination, I did not detect any lesions of a scrofulous character: these, of course, were quite unnecessary, as scrofulous matter may be formed without any accompanying lesion.

This case suggests two questions of physiological significance: 1st. Does the catamenia when retained, owing to impervious os or other causes, remain in the uterus unaltered, or does it undergo any change? 2nd. Does the continued presence of the retained catamenia in the uterus excite the mucous membrane to increased activity?

NOTES FROM AN INDIAN CASE-BOOK.

BY A. E. QUERIPEL, M.R.C.V.S., RESERVE REMOUNT DEPOT, HAPUR, INDIA.

THE following cases, which have occurred in my practice during the past year, presenting, as they do, some interesting features, I am induced to send them to THE VETERINARY JOURNAL for publication; and although they are forwarded at rather a lengthened period from the date of their occurrence, still I trust they may prove acceptable to its readers.

Case of Pyæmia arising from Strangles.

A "Waler" gelding was admitted as a patient into the Infirmary with febrile symptoms, difficulty in deglutition being a prominent characteristic. No glandular or other enlargement in the region of the throat could be detected, and the horse progressed very favourably for four days, at the expiration of which an unhealthy, greenish, muco-purulent discharge was noticed from the right nostril, the Schneiderian membrane being at the same time highly congested. Owing to the suspicious nature of the case, the horse was at once segregated and placed under close observation. The following day the submaxillary gland on the same side as the nostril affected became slightly enlarged and indurated. No change occurred for the next five days, and the enlargement, although constantly fomented, did not increase in size. On the sixth day, however, from the date of the horse's admission, the nasal discharge ceased, and suppuration speedily ensued, the abscess increasing so rapidly in size that in two days it entirely filled the submaxillary space. At this period the case appeared to be one of simple Strangles; the Schneiderian membrane had assumed a healthy hue, and although, of course, deglutition was a matter of difficulty, owing to the size of the abscess, still the appetite was good, and the horse eat heartily when fed on sloppy diet. In the course of three or four days I lanced the abscess, and was surprised to see that the pus, which was thereby given vent to, was quite *inspissated.* Of this there was about a pint. From this date the patient

progressed most favourably, continued to feed well, and, in fact, appeared convalescent. Tonics—quinine and iron—were given, as also occasionally small doses of Magnesia Sulph., for the purpose of keeping the bowels relaxed. Great care was also taken to prevent the orifice of the abscess closing. On the eighth day, however, after the abscess was opened, indurated tumours were noticed on the hock and fetlock joints. These at first were hard, but they speedily began to pit on pressure, and assumed the character of abscesses. Others subsequently appeared on the abdominal walls, and day by day increased in number and size, until no part of the body could be said to be free from them. The patient presented a most dejected appearance; the appetite was totally lost; the pulse almost imperceptible; the breath became fœtid, and it was evident that absorption of some of the deleterious matter from the pus contained in the submaxillary abscess had taken place, or, in other words, that the patient was suffering from Pyæmia. The animal died on the sixth day, or more than three weeks from the date of his admission to hospital. The *post-mortem* examination disclosed the formation of pus in all the tumours, also in the medullary portion of the kidneys. The left lung was healthy in comparison to the right, but was covered with petechial spots. The right lung was covered with these metastatic abscesses, the majority of them being close to the surface. The spleen and liver were healthy. The heart was soft and flabby, and in the left ventricle was found a large clot of sanious, purulent matter, very much resembling that found in other parts of body. I carefully examined the nasal chambers and sinuses of the head, but found them perfectly healthy.

The only question which now remains to be considered, and which it would be instructive to decide, is, when did the blood become tainted with the virus? The formation of these abscesses must, I think, be associated with a decomposition of the purulent matter contained in the primary one; and the question naturally arises, was it prior to or after the abscess was lanced? From the fact that the pus was found to be inspissated in character, it would lead one to suppose that the *liquor puris*, in which state pus always enters the blood, had

become absorbed before it was given vent to; but if this theory be correct, why should the tumours not have become developed before the eighth day after the operation? And again, all authorities who have written on the subject agree that pyæmic poison is more frequently developed after exposure to the external air, which can readily be accounted for by the action which atmospheric influences exert on the decomposition of animal fluids. To this latter hypothesis I naturally would lean, although the former would also appear to be feasible.

Case of Fatty Degeneration of the Muscles of the Hindquarter.

This horse, a "Waler," aged eleven years, met with an accident by slipping down whilst in the shafts. The exact seat of the injury was not clearly defined, but some lesion of the stifle-joint was supposed to have occurred. Antiphlogistic treatment was resorted to with no benefit; and when I first saw the patient, six months after the injury had taken place, he was very lame; in fact, was unable to impose any weight on the limb. After watching the case carefully for some time, I came to the conclusion that some lesion in the region of the hip-joint had occurred, and I presumed that bony deposits had formed around that joint. How wrong, however, I was in my diagnosis will be seen by the result of the *post-mortem* examination. One symptom, which in this case was noticeable by its absence, was frequently a cause of surprise to me—viz., atrophy of the muscles of the quarter. This, in former cases of this nature, had been an invariable symptom, and one would have imagined that if only from the fact that the patient had imposed no weight on the limb for a considerable period, wasting of the muscles would have certainly supervened. But, as before stated, such was not the case. This I particularly mention, as being likely to enable us to form a correct diagnosis in cases of this nature which may hereafter present themselves to our notice. Seeing that no further treatment would prove of any avail, the animal was destroyed, and on making a *post-mortem* examination the following lesions were discovered:—

No injury whatever to the bones entering into the formation of either the hip or stifle-joint was observable, but the muscles

around the former, especially the glutei, were extensively diseased. Great pallor was noticed on first removing the skin; and on investigating the changes which had taken place in the tissue, it was discovered that fatty degeneration of the muscular fibres had occurred, thus accounting for the absence of atrophy, and also for the loss of motor power of the part. The fibres of the muscles were easily broken down with the fingers. At first sight, on casually examining the muscles, I considered it a case of fatty infiltration, but closer observation plainly showed that the muscular fibres were also affected.

Green, in his "Pathology and Morbid Anatomy," says: "In striated muscle, both in the voluntary and in the involuntary of the heart, the fibres themselves are the seat of the morbid process, which consists in the conversion of the albuminous matter of which the fibre is composed into fat. The earliest stage of the affection is characterized by an indistinctness in the transverse markings of the fibres, which in many parts become studded with minute particles of fat. These gradually increase in number and in size, and are usually distributed somewhat irregularly within the sarcolemma. The fibres become extremely friable, and are readily broken up into short fragments. As the process proceeds, the transverse markings entirely disappear, and nothing but molecular fat and oil globules are seen within the sarcolemma."

The above case is a good example of the foregoing extract, and, as far as my experience leads me to believe, is one of rather unusual occurrence. We are all well aware of this morbid change taking place in the muscular structure of the heart, but in voluntary muscular fibre it is one that does not frequently come under our notice.

Case of Ventral Hernia treated by the Actual Cautery.

A young "Waler" remount was admitted as a patient to the Infirmary, suffering, as most of these horses do when first they join their regiment or battery, from Bilious Fever. This happened to be a case of unusual severity, and most careful treatment was required to combat the various symptoms which presented themselves. On the fifth day, the animal was very weak;

respiration very laboured; pulse 52, and very small; œdematous swellings of limbs, and, as in all these cases, there was great functional derangement of the liver. On the following morning, with the patient in this critical state, I regretted very much to find that during the night she had met with an accident, whereby a large ventral hernia had occurred. I returned the intestine, and placed a large pledget of tow on the part, binding it tightly with a broad surcingle; but on visiting the patient in the evening, I found that all the febrile symptoms were greatly aggravated. The pulse had risen to 70, and was wiry; the breathing very laboured, and the visible mucous membranes highly injected. In addition to these symptoms, partial paralysis of the hind extremities was noticeable. Taking all the circumstances into consideration, I determined to leave the treatment of the ventral hernia to such time as the more urgent symptoms had disappeared. I therefore removed the surcingle. The tumour from this time increased rapidly in size, but the febrile symptoms gradually subsided, and in the course of a few days had entirely disappeared. In about a week the patient moved the hind extremities freely; yet, as any operation for the treatment of the hernia would have necessitated casting the animal, and might have again brought about paralysis, I determined to wait a little longer. In the meantime, I placed the animal on low diet, and gave an aloetic purge. About a fortnight after the patient was convalescent, and about one month after the occurrence of the accident I cast her. At this time the tumour was about 18 inches in circumference at the base, and very pendulous. I applied the actual cautery—the lines being about one inch apart—and afterwards placed a cantharadine blister over the part. The following day there was great tumefaction of the surrounding parts, but the general health of the mare was good. Great attention was paid to diet, boiled barley being given, and no grass, which, in India, is the general substitute for hay. A fortnight after the date of the operation gentle exercise was resorted to, and a week after this the battery to which the mare belonged being about to march, I determined to send her with it, with instructions not to work her. At this time the tumour was only about three inches at the base. From this

time I did not see the animal, but was informed by the Principal Veterinary Surgeon, who saw her three months afterwards, that the tumour was greatly diminished in size, and that she was able to perform her duty. I have been induced to send you the history of the above case, as I think the simplicity of the operation, combined with its efficacy, will recommend it to other practitioners who may be called upon to treat similar cases of Hernia. In this instance, I think a truss would have been useless; the size of the tumour precluded the possibility of treatment by ligature; and although never tried by myself, yet I should imagine that the application of skewers beneath the skin, recommended by some authors, is a mode of treatment which would only be had recourse to as a *dernier ressort.*

PHYSIOLOGICAL TREATMENT OF VISCERAL INFLAMMATIONS.

BY NICHOLSON ALMOND, STUDENT, ROYAL VETERINARY COLLEGE.

THE great mortality attendant upon inflammation of the various viscera is well known to all students of medicine, and any facts, old or new, which, when applied, may tend to reduce the percentage of deaths from this cause, would be welcomed by all who take an interest in their profession.

The close relations existing between physiology and pathology are now fully recognized, and to insure the opinion of any particular line of treatment by those whose consideration is of value, it is necessary to show that the conclusions arrived at are based upon observed facts, experimental or otherwise, and the rational outcome of accurate reasoning.

Fortified by the consciousness that success will attend treatment having such a basis, the practitioner confidently applies it, and with the happiest results. Without such a basis there is no satisfaction in resorting to treatment at all.

In the following lines it is endeavoured to show that the treatment recommended is based upon the undoubted facts of physiology and pathology. The treatment is not new, for in a

partial manner it has been applied from the earliest times; yet, for lack of the rational basis which I have shown in the following paper, it has not commanded that universal adoption which the writer is persuaded it has in store for it, and deserves.

It has long been supposed, and recently it has been demonstrated, that there exists between the cutaneous and muscular systems on the one side, and the viscera on the other, a direct antagonism as regards their blood supply: to induce a rapid circulation in the skin and muscular systems is to cause a corresponding drain upon, and proportionately anæmic condition of, the viscera; and, on the other hand, to drive the blood from the cutaneous and muscular systems is to cause a congested condition of the viscera.

This antagonism appears to depend upon the different degree in which those systems are acted upon by a discharge of contractile influence from the vaso-motor centre: such a discharge affecting the vessels of the viscera in a much greater degree than those of the cutaneous and muscular systems, the skin being second in degree, and the muscular system in the least degree affected; the difference between the cutaneous and muscular systems being so little that they may be classed together, as compared with the viscera. This difference of response is due to the fact that the splanchnic nerves are composed wholly of fibres which convey only contractile influence, while those distributed to the muscles and skin are principally dilating fibres.

It is found that the excitation of a sensory nerve produces, by reflex action through the vaso-motor centre, dilatation of all the vessels in the region to which it is distributed, and contraction of all other arteries of the body. The contracting power of the arteries of the viscera being greater than that of those of the muscles and skin, overcomes it; and hence it is found that although the vessels of the irritated part are larger, and the flow of blood through them more rapid than at other times, the blood pressure is greater, and to this extra pressure is due the contraction of the vessels of the viscera.

The antagonism demonstrated by physiologists is fully confirmed by pathological observations, which show that the coldness of the superficies of the trunk and extremities is in

inverse ratio to the existing internal heat during visceral inflammations.

Recognising the antagonism that exists between the exterior and the viscera of the body, it is very clear that it will be advantageous to have recourse to the induction, by some means or other, of increased circulation in the superficies whenever inflammation of any internal organ exists, and the benefit may be expected to be co-extensive with cutaneous circulation initiated by a mild stimulus—that is to say, we should not be satisfied with the application of a stimulus over the region of the internal organ affected, as has hitherto in some instances been recommended, nor in my opinion should the selected stimulant be such as to inflame the dermis, thereby producing stasis and the concomitant reduction in quantity of blood circulating in the part, and withal making it tender, causing nervous irritability and discomfort to the invalid—conditions which should be most studiously avoided. But the stimulant should be such an one as can be applied again and again, as often and as long as required, viz., until either the symptoms abate or the animal succumbs to the disease.

All these qualities are found in "cold water packing"; thereby the necessary stimulus is given to the sensory nerves, which by reflex action cause the vessels to dilate, and that remarkably rapid flow of blood through them to which special attention has already been directed, and a proportionate drain upon the inflamed viscera, with contraction of their vessels, as shown by the accompanying increase in the blood pressure.

These results are purely physiological, and therefore, while its action continues, the animal experiences from it no influence except that which is beneficial; and, in addition to these excellent qualities, it possesses that of extensive application: it being practicable to apply this method at least to the whole of the trunk, and the limbs, being bandaged, they of course would participate in its general curative influence.

Lest some of my readers should be unaware what is intended to be conveyed by the term "cold-water packing," it will perhaps be as well to give a brief description of it.

The means whereby the cold-water, or, if it is preferred, very

weak solution of ammonia, is applied, is by bands of spongio-piline, which consists of felt coated externally by a waterproof covering to prevent a too rapid evaporation. The bands should be from fifteen to eighteen inches wide, sufficiently long to pass quite round the body, and also sufficiently numerous to envelop the trunk. These bands are saturated with water, the solution above referred to, or some other mild stimulant; and the superfluous fluid having been pressed out, they are applied to the body, the shape of which they readily take. They should be strapped close, and only require re-soaking when approaching to dryness, after which they should be again immediately applied. Only one should be taken off at a time.

The fluid soaked up by the spongio-piline soon takes the temperature of the body, and acts continuously as a mild stimulant to the peripheral nerves of the skin, whereby its beneficial influence is exerted. It rarely requires to be wetted oftener than night and morning.

Single bands about fifteen inches wide have been used with great advantage and success in chest affections, by various eminent practitioners; but if my reasoning is correct, they have only had a partial advantage, for it is herein shown that the advantage is in proportion to the extent of surface stimulated.

The application of this method has all the advantages of warm fomentations without the disadvantages of intermittence.

In my opinion it acts exactly as the fresh sheep-skin does when applied to the loins or other parts of living animals.

It may easily be applied locally, and would supply the moisture and retain the warmth to which the poultice owes its beneficial influence; and in many other ways it should be utilised for the relief of domesticated animals.

It will be seen that the relief which most impartial observers agree follows the application of blisters when internal inflammation exists, is in harmony with the views herein set forth, and the opinion that it is only of a temporary character confirmed; further, it may be inferred that the injury which they inflict fully counterbalances their beneficial influence, and it is contended that the treatment herein preferred is such as to maintain continuously the first and only beneficial effect of such agents, without their baneful influence following in its wake.

"BLACK QUARTER," "QUARTER ILL," OR EMPHYSEMA INFECTIOSUM (*RAUSCHBRAND*).*

BY H. AVRILL, VETERINARY SURGEON, BILLIGHEIM, GERMANY.

CASE I.—A cow had to be killed on October 7th, 1877, which had been suffering from Catarrh of the stomach for about thirty hours, unaccompanied by Fever. The symptoms presented by the animal were shivering, unsteady gait, especially with the posterior extremities, heart's-beat palpitating, and body bedewed with sweat. I found by *post-mortem* examination, an hour after death, that the blood in the superficial vessels was of a dark cherry-colour, tar-like, and a knife when immersed in it was of an analine-red hue.

On opening the abdominal cavity the omentum was found to be injected, the spleen was bluish-black in colour and five or six times its normal size; when cut it was soft, fluid, and also presented the peculiar analine-red tint. The small intestines varied in colour from a reddish to a dark blue. As I considered it to be a case of Anthrax, I sent for the district veterinary inspector, who confirmed my opinion.

I filled two glasses with some of the splenic pulp, and sent one to Mr. Göring, the other to Dr. Halenka, the veterinary district inspectors at the Agricultural Experimental Station at Speyer.

I inoculated two rabbits at four different places on the internal surface of both fore-arms with some of the splenic pulp, about one and a half hours after the death of the cow. One rabbit died twenty, the other thirty-five hours after inoculation, and both presented similar *post-mortem* lesions, viz.: the point of inoculation was dry and uninflamed; the surrounding tissue was swollen and œdematous, and when cut, a clear fluid, which impregnated the subcutaneous tissue, flowed from the surfaces; it was of a pale yellow colour, and here and there hæmorrhagic points could be detected. On opening the abdominal cavity, the veins were found to be distended with blood similar in appearance to that of the cow. In the heart and large arterial trunks the blood had formed a coagulum. The spleen was swollen, brownish-red,

* Translated from the *Wochenschrift für Thierheilkunde and Viehsucht* January, 1879. By G. A. B.

and resembled in miniature the corresponding organ in the cow; the pulp, however, was somewhat firmer. The remainder of the abdominal viscera gave no indications of disease.

These inoculation experiments made my diagnosis somewhat doubtful, because the characteristic signs at the points of inoculation were not those usually found in Anthrax. Also, in the case of the cow, local Emphysema (*Rauschbrand-emphysem*) was wanting.

The specimens which I sent to Speyer, however, proved successful in producing exactly the same phenomena in a rabbit; and, moreover, Anthrax *Bacilli* were found in the blood.

Thus, it is fair to conclude that the cow died from "Quarter Ill" (*Rauschbrand*) without Emphysema, *i.e.*, Anthrax without external localization.

CASE II.—The following case I did not see during life. The history is as follows:—Three days before the cow became ill she calved naturally, and expelled the fœtal membranes a few hours afterwards. The disease (which the owner did not consider serious) lasted eleven hours, and I made an autopsy about ten hours after death. The cow was about five years old and in good condition. *Rigor mortis* slight, several of the joints being easily movable. The mucous membranes of the mouth and nasal chambers were pale, but the conjunctiva was injected. Bright-red blood flowed from the nostrils. The labia of the vagina were swollen. Subcutaneous Emphysema existed nearly all over the body, and gave a cracking or crepitating noise when the hand was passed over the skin. The abdomen was distended with gases (tympanitis). The mammæ presented a bluish-red colour around the base of the teats, the teats themselves being dark blue. The udder was tolerably filled with greyish-red coloured milk. When flayed, the cutaneous vessels were seen to be filled with bright-red fluid blood. The subcutaneous tissues were infiltrated with bloody serum and gas, the blood in the vessels being still fluid, black and tar-like. The muscles beneath were black or black-red, spongy and emphysematous, and crepitated when handled. The lymphatic glands of the shoulder and flank were swollen and yellow. The Emphysema and infiltrations were more marked on the right than on the left half of the body;

but this could in a large measure be accounted for from the fact that the body rested on that side for about nine hours before the autopsy could be made. When the skin was removed the odour of decomposition was perceptible. The abdominal cavity contained about a pint of a reddish-yellow exudate; the peritoneum, stomach and large intestines were normal; a portion of the ileum was reddened and felt thickened, and when cut the mucous membrane was found to be swollen and injected. The contents of the intestines were normal. The uterus was normal externally; the mucous membrane, however, was of a dark-brown colour, and the organ contained about three quarts of fluid, which had a reddish-brown colour, was of a thick consistence and carrion-like odour. There were no remains of fœtal membranes, etc. The liver was anæmic, bright in colour, and when cut bubbles of gas rose from the surface. The gall-bladder was normal. The spleen was nearly normal in size and consistence. In the thoracic cavity about a pint of bloody exudate was found. The right lung was of a blackish-red colour, hyperæmic, œdematous, and filled with air. The left lung appeared healthy. The pericardium contained from three to four teaspoonfuls of bloody serum. The cardiac muscular tissue was dark red and soft. The blood in the ventricles and auricles was coagulated and dark in colour. The parietal pleura presented hæmorrhagic spots and streaks. The trachea was normal. The lymphatics situated in the cavities of the body were infiltrated. The deep-seated muscles of the posterior extremities also presented pathological changes, and appeared as if they had been boiled,—being disassociated, soft, marked with dark lines, crepitating, the separate bundles of muscular fibres being separated from one another by gaseous products (*Muscular emphysema*), and emitting a loathsome odour.

Portions of the muscular, lung and splenic tissues were examined microscopically. The muscular tissue (examined in a half per cent. solution of Sodium Chloride) presented distinct transverse striæ, and when the cover-glass was gently pressed on to the object numerous Anthrax rods were visible. They were straight, simple, and moved somewhat like the magnet needle of a compass. There were also numerous spherical bodies, with a

bright clear centre and dark borders, having a diameter similar to that of the rods, moving about the field. Blood corpuscles were few. Anthrax rods were not found in the splenic pulp nor in the lungs.

All the tissues examined gave an acid reaction. When the muscular tissue was washed with water, it became quite pale and white; the darkest (or most diseased) portions became so much quicker than the lighter (normal) muscle. The muscular tissue, which was hermetically sealed in water for twelve hours, presented the same microscopical appearances as that described above. The motionless beaded *Bacilli*, which are described by Prof. Feser, were not detected. After the muscle had been washed, it had an acid reaction, and crepitated when pressed between the fingers. The same was also observed after a further twelve hours' soaking.

No definite cause can be found at present for this malady; but it appears to be worthy of notice, that as the cow had recently calved, infection might have taken place by means of the generative organs.

Editorial.

VETERINARY SANITARY SCIENCE IN INDIA.

We have from time to time drawn attention to the existence of serious animal diseases of a transmissible character in our Indian empire, and the great necessity for adopting active measures for their suppression, as well as for the investigation of those whose nature and mode of origin and propagation are still obscure.

The great value and importance of the various domesticated animals in India, and the grave inroads which these maladies have frequently, in recent days, made among them, would surely have impelled an intelligently-directed government to take steps for their protection from preventable diseases. But we regret to observe that very little indeed has been done in this direction, and that every year these scourges appear to be on the increase, until now some of them are assuming quite formidable proportions. Only a very few years ago we had occasion to institute inquiries as to the presence of certain contagious disorders among animals in India, and we then learned that Glanders was all but unknown in that great country; indeed, it appeared to be so rare that its existence was denied by some correspondents. But such is not the case now. For reasons which are not far to seek, the loathsome

affection has become so prevalent as to threaten great loss and embarrassment, not only to individuals, but to the public service; and if nothing more is attempted than has been already ventured upon, it will not be long before the destructiveness of the disease is well known throughout the length and breadth of the three presidencies, and prove to be a deadly scourge, not to the equine species alone, but to mankind. As it is, Glanders is so rife in the Punjab that the most alarming reports reach us from different sources, and the army operating in Afghanistan is even experiencing inconvenience from its prevalence. Besides outbreaks in different cavalry regiments, we learn that a battery of artillery proceeding on active service had to suspend its march in consequence of the horses being affected with Glanders and Farcy; a large number of horses in the Governor-general's body-guard have been shot, and the remainder cannot move because of infection; the contagion is rampant among the dâk animals throughout the country, and very many have been destroyed; it has manifested itself in the valuable Saharanpore stud; Calcutta and Ballygunge are looked upon as disease-centres, whence the germs are transported far and wide; the dâk-gharry or public carriage stables along the great highways are dangerously tainted, as are also the horse-boxes on the railways; glandered horses and ponies wander about the roads and straggle into camps among troop-horses; and we have a report that Burmah is invaded by the pestilence. The contagion exhibits a very unusual degree of virulency, which greatly facilitates its dissemination; and this is further increased by the absence of proper supervision, as well as by the conduct of the native owners of diseased animals—the lower classes of whom have established a system of beacon-fires to give notice of the approach of the Inspecting Veterinary Surgeon (when there chances to be one), when all ponies are immediately hurried away into the contiguous jungle. No amount of warning will teach these people that the disorder is equally fatal to human beings as to animals.

Our columns testify to the havoc made in India by anthracic diseases, which Government will do nothing to throw light upon; and there are bovine distempers whose nature is well known, whose ravages are only too manifest, and yet against which there is no organization to contend. For instance, the Cattle Plague has its home in India, and almost yearly devastates one or other region. At the present time there is a probability that it will prove more than usually formidable and troublesome, as it has shown itself towards the base of our operations against Cabul, and may compromise not only the transport, but also the food supply of our troops. The correspondent of the *Standard* telegraphs from Rawul Pindee on April 7th:

"The Cattle Plague, which has for some time committed serious ravages here, has suddenly so increased in virulence that it threatens seriously to embarrass the commissariat. The cattle are dying in scores; and as the country round has been already drawn upon to its full extent for draught cattle, the waggons drawn by the animals which have succumbed cannot be taken on until fresh bullocks are brought from down the country.

"A Commission of Inquiry has been appointed and is now travelling along the road; but although its members may collect the statistics of the loss which has taken place, there is but little hope that they will be able to gather any information which will enable them to suggest a method of checking the progress of the pest.

"As for myself, the break down in the transport arrangements has arrested my progress to the front, and I see no prospect of getting forward for some days at least."

Thus we see what a grave responsibility rests upon the Indian Government, because of its neglect of Veterinary Sanitary Science, and how this neglect operates upon the material prosperity of that country and upon our influence there. The authorities have but a very faint conception of their duties in this respect, and seem to allow sanitary matters to trouble them to a very slight degree. The Indian army is anything but effective, so far as the Veterinary Department is concerned; and as we showed in our issue last month, the state of affairs in the columns in Afghanistan, where there is no veterinary inspection or control, is most discreditable to us as a civilized, civilizing, and humane people. The reports which are forwarded to us as to the cruelty inflicted upon the unfortunate transport animals, through ignorance, neglect, and probably something worse, are too horrible and disgusting for publication. Suffice it to say that among the camels alone, of seventy lying dead at Quetta, twenty-six were only two years old—a per-centage of more than thirty-seven unfit for service when purchased. Very many of the female camels were with young, and died from the effects of abortion. The treatment to which the expeditionary animals have been subjected is beyond description, and thousands have perished for lack of veterinary supervision, and through the ignorance of the transport officers, who, nearly all belonging to infantry regiments, know nothing of the management of the creatures entrusted to their care. Not a veterinary surgeon has been attached to the transport, which numbers thousands of camels, bullocks, mules, ponies and elephants, and the loss from a money point of view is, therefore, out of all proportion to the small amount which is saved in this way. But this terrible mismanagement might have had a most serious result for our army, if an enterprising and skilled enemy had opposed our generals, instead of one which possessed neither of these qualities. As it is, one column could not proceed beyond Kandahar, evidently owing to its transport animals having been expended; and the successful movement, for any length of time, of the small army composing the other columns is somewhat problematical.

In support of our statement, based on unimpeachable authority, we quote from a private letter from an officer with General Stewart's army, and which appeared in the Lahore *Civil and Military Gazette* for March 19th:—

"I assure you it surpasses anything you ever heard or read about, and the farther we march the worse things seem to be. Thousands (I use the word advisedly) of dead camels in every stage of decomposition lie along the road. I do not exaggerate when I say that there is at least one in every fifty yards from Quettah to Kandahar. Around encamping

grounds they lie simply in noisome heaps, and the stench that poisons the air is something horrible. It seems that it is nobody's business to bury these dead carcases, and as they go on accumulating, it is not hard to prophesy what must be the inevitable result of so total a disregard of all laws of hygiene as soon as the hot season sets in. I am simply appalled at the state of things as I see them, and am filled with astonishment that it can exist under a civilized Government. What are the Sanitary Inspectors doing? Cholera or the Plague itself must certainly follow all this, and I suppose when some terrible epidemic does break out, Government, and those responsible, will take some steps to endeavour to mitigate an evil which should not have been neglected so long."

Owing to ignorance, and the prejudice begotten of ignorance, and to a short-sighted and by no means enlightened policy on the part of authorities in India, the position of Veterinary Medicine and Sanitary Science both in the Army and out of it is extremely unsatisfactory, and the result is heavy loss, inconvenience, and even danger and disaster to the public service. The present state of affairs urgently demands investigation by the imperial Government; for when we consider the immense interests at stake, and the calls the future will undoubtedly make upon this country, through its relationship with India, it is intolerable that such losses and risks should be longer submitted to, when they might be easily and cheaply obviated by intelligent administration and ordinary forethought.

ANTHRAX IN PREGNANT ANIMALS.

PROFESSOR FESER, of the Munich Veterinary School, in the *Wochenschrift für Thierheilkunde und Viehzucht* for February of this year, alludes to the fact that Branell and Davaine had remarked that the blood from the fœtus of an animal which had died of Anthrax did not produce the disease by inoculation of other healthy creatures, while the maternal blood readily did so. Long before the nature of the disease was so well understood as it is at present, attempts were made to account for this peculiarity by pointing out histological dissimilarities between the tissues of the mother and fœtus. While in the blood and all the organs of the mother the peculiar rod-shaped bodies were found, they could never be discovered in the *Liquor amnii*, nor in the blood or tissues of the fœtus; whence it was justly concluded that these organisms were the active agents in the production of Anthrax. But since Koch, of Wolstein, has incontestably proved that Anthrax is a parasitic disease—all the symptoms and lesions being due to the rod-shaped bodies—Feser has adopted the opinion that the placenta of the fœtus is free from the virulence, the maternal placenta acting as a physiological filtering apparatus through which the Anthrax organisms cannot pass. As a practical illustration of this notion, Feser adduces the following experiment:—On November 10th, 1878, at 9.30 in the morning, a pregnant ewe had injected into the side of its chest, by means of a syringe, one-tenth cubic centimeter of Anthrax blood, from a rabbit which had died of the disease. The sheep succumbed to the malady during the night of November 11th and 12th; but an hour or two before death it gave birth to a strong healthy lamb, which was subsequently reared

for more than four weeks on cow's milk given by means of a child's feeding bottle. This lamb remained in perfect health, and not only were the *post-mortem* and the microscopical appearances of the ewe's tissues decisive as to the presence of Anthrax, but several inoculations of rabbits with the blood and spleen were followed by positive results.

Here we have the interesting fact established that a pregnant animal, suffering from blood-poisoning—if we may use the term when treating of Anthrax—immediately before death giving birth to an uninfected and healthy progeny : proving that the placenta offers an insurmountable obstacle to the transmission of Anthrax from an infected mother to the fœtus, though the blood of the parent may swarm with *Bacilli*, and prove deadly when inoculated on other animals, or perhaps even on the same fœtus after it has been born.

CONTAGIOUS PLEURO-PNEUMONIA IN HOLLAND.

THIS disease has considerably diminished in extent in South Holland during the course of 1878. No cases had occurred in the Rhenish portion of that province during the last months of the year, though previously it was most infected. It was therefore considered that the scourge had been totally suppressed. The application of the law of August 8th, 1878, had been productive of the best results, *and the favourable effects of inoculation, employed as a preventive measure, had been everywhere most marked.* After the inoculation of 35,000 head of cattle within the four months, and throughout the extent of an isolated, infected *circle*, the disease list fell so rapidly that hopes were entertained that the malady would soon be quite extinguished.

At Schiedam—one of the most contaminated communes, where the authorities were previously compelled to slaughter about a score of diseased cattle every week—towards the end of the year there had only been one or two cases, and during the last week in the year none had been reported—a circumstance which had not been noted for forty years. This result is attributed to preservative inoculation and slaughter of the diseased.

THE TRANSMISSIBILITY OF SWINE PLAGUE.

TO Klein we owe the fact that Swine Plague can be transmitted, though with some difficulty, to other than the pig species, as he successfully inoculated mice, rabbits, and guinea-pigs with matter from diseased swine. In an editorial article in the *National LiveStock Journal* of Chicago (written, we presume, by Professor Law), is the announcement that a rabbit and a merino wether were for the third time inoculated from sick pigs, the two previous inoculations having proved harmless. "On this third occasion, however, both became decidedly ill, and the diseased products from the rabbit having been inoculated back on a sound pig, this was in due time seized with the disease." The writer adds that the disease in the wether was not tested in the same crucial manner, by inoculating its morbid products back upon the swine, though he hoped to perform the experiment.

The disease in the sheep ran a mild course.

From the circumstance that the disorder can be conveyed beyond the porcine tribe, an endeavour has been made to prove that it is not a plague, and that therefore the name we have given it, Swine Plague, is unsuitable, that of Hog Cholera being offered as a better designation. We fail to see that because a most fatal and infectious scourge can be transmitted to other species, that it is any the less a Plague. Those who object to the most simple and

least misleading name we can find for the disease in question, appear to forget that Cattle Plague is not limited to the bovine tribe, but can be communicated to a greater number of species than the swine malady—so far as our present knowledge extends. To designate the latter "Hog Cholera" is to commit even a greater blunder than to term it "Typhoid," as it has no clinical or pathological analogy to Cholera, and the name would be simply nonsensical and misleading. The disease is as much a plague of swine as Cattle Plague is of oxen, and to give it any other popular name than "Swine Plague" is to make confusion worse confounded and violate the principles of comparative pathology.

Reviews.

MANUEL PRATIQUE DE L'EXPLORATION DE LA POITRINE CHEZ LES ANIMAUX DOMESTIQUES. By F. Saint-Cyr. Paris: Asselin and Co. 1879.

The name of Professor Saint-Cyr is so favourably known to the veterinary profession, especially on the Continent, as that of a most indefatigable writer and scientific observer and investigator, that any new treatise from his pen is certain to receive a hearty reception, and prove to be a welcome addition to those purely technical works which give an exalted position to our science, while they facilitate the practice of our difficult art. Saint-Cyr's practical treatise on the exploration of the chest of the domesticated animals will prove a valuable guide to those members of the profession who are determined to establish their clinical practice on the most exact physiological and pathological investigation. It is the first and only special work on the subject; for though in the classical writings of Delafond, Lafosse, and other French authorities, the exploration of this important cavity has received careful notice in connection with its diseases and that of the organs it contains, yet it has not received that exhaustive and complete treatment which it deserves. The author has had ample opportunity for carrying out investigations and experiments in this direction during twenty-eight years of uninterrupted clinical study at the Lyons Veterinary School, when he had also every facility for studying and following the various phases of the numerous chest diseases daily offered to his observation, and when, as he states, he auscultated and percussed a very large number of patients, comparing the stethoscopic and pleximetric signs with those furnished by other methods of investigation. He also profited, on every available occasion, to rectify and verify, when necessary, the diagnosis formed during life by an inspection of the cadaver.

In this way a considerable mass of materials was accumulated, which really forms the staple of the book, this being almost a synthetical *résumé* of his labours, completed by a careful study of the best writers on veterinary and human stethoscopy and pleximetry. The result is eminently satisfactory. The physical methods—percussion and auscultation—which must be resorted to for examining the chest of the domesticated animals in health and disease, are described fully and

clearly, and the varying results they yield under diverse conditions are succinctly enumerated and accounted for. Like all those who have practised percussion regularly and attentively, and who are more desirous of acquiring accurate information than making a display before owners or attendants on animals, Professor Saint-Cyr places far more confidence in the hands alone than in the intervention of instruments—the right hand serving as a percussor, while the left plays the part of a plexímeter.

In addition to the two sections in which percussion and auscultation are so admirably treated, Saint-Cyr has added a third on Pneography, which is full of information and interest. The mechanical apparatus invented by Wierordt for the registration of the pulse and, later, the respiration, known as the "sphymograph," had been in use for some years before Marey, in 1865, introduced the "pneumograph," which has been employed so largely in physiology and pathology, and by veterinarians like Chauveau, Toussaint, and Arloing. But Rodet, the late director of the Lyons Veterinary School, had been at work for a long time in devising an instrument which might render the diagnosis of "broken wind" more apparent, and in 1868 he presented two small instruments—the "pneoscope" and "pneograph" to the Medical Society of Lyons. Unfortunately, however, owing to the commencing illness to which he at last succumbed, he could not continue his investigations with these apparatus, and charged Saint-Cyr to carry them on to the best of his ability; and this he appears to have done most conscientiously. By means of Rodet's pneograph, the respiratory movements are most accurately delineated, and the utility of this application of the graphic method to physiological and pathological research is well demonstrated in the manual now before us.

To those members of the profession who read in French and care to study the scientific aspect of Veterinary Medicine, Saint-Cyr's book will be treasured as a most instructive assistant and guide in the difficulties attending the exploration of the chest of animals, and a trustworthy work to which even those who are no mean adepts in this line may often advantageously refer. Appended to each section is a good bibliography, containing the most important treatises which have already appeared on the different subjects. Strange to say, however, the very excellent "Lehrbuch der physikalischen Diagnostik der Krankheiten der Hausthiere," by Professor Vogel, of the Wurtemburg Veterinary School, and published at Stuttgart in 1874, is not mentioned —an omission which we regret, as we consider this text-book a credit to German veterinary literature, and equal to anything of the kind in human medicine. We may add that Saint-Cyr's manual is well illustrated and got up, the tracings of the respiration being particularly distinct and telling.

ANATOMY OF THE INDIAN ELEPHANT. By L. C. Miall and F. Greenwood. London: Macmillan and Co. 1878.

The elephant occupies such an important position as a pageant, sporting, and labouring animal in our Indian empire, that it well

deserves the attention of those members of the profession who are now serving in, or are likely to visit that part of the world. As nothing is taught of its anatomy at our schools, and as hitherto there has not been anything written on the subject easily accessible to veterinary surgeons desirous of making themselves acquainted with it, the only opportunity of gaining information has been by making *post-mortem* examinations or partial dissections of the carcases of animals which may have chanced to die in a camp or cantonment. These, not being pursued on any systematic plan or in a complete manner, cannot but be unsatisfactory, especially when we remember the great differences between the structure of this and other quadrupeds. The "Anatomy of the Indian Elephant," by Professors Miall and Greenwood, was originally contributed to the *Journal of Anatomy and Physiology*, and a perusal of the description of the structure of this huge and interesting creature then gave us much pleasure. The present memoir is merely a reprint from that publication, with the addition of a brief notice of the male generative organs; and in its now convenient and portable form it will doubtless receive more attention, as it will be more valuable to the specialist. For the benefit of future students there is a list of the principal memoirs on the anatomy of the elephant, while there are also numerous instructive illustrative notes, woodcuts and lithographs. Notwithstanding what has been accomplished in completing the anatomy of this mammoth beast, which weighs something like three tons, much yet remains to be done. From its size, and the great infrequency of opportunities for making dissections in Europe, extremely few anatomists have been able to undertake dissections. There is, therefore, a good field for distinction to those of our colleagues in India who care to enter on this subject; and to them, and also to those who wish for a guide in pathological dissections, we sincerely recommend the cheap little memoir issued by the enterprising firm of Macmillan and Co.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 10TH, 1879.

Present:—Gen. Sir Frederick Fitzwygram, Bart. (President), in the Chair, Messrs. Batt, Blakeway, Collins, Cuthbert, Dray, Fleming, Greaves, Moon, Taylor, G. Williams, and the Secretary.

Correspondence.

Letters were read from Professor Williams, and Messrs. Withers, Cox, Balls, Morgan and Proctor, regretting their inability to attend the meeting.

A letter was read from Mr. Menzies, stating that he returned the petition, as he was sure the Directors of the Highland and Agricultural Society would object to sign it in its present form. He also returned the draft diploma, in which he did not see anything requiring alteration. The petition was after-

wards returned along with the form of diploma which had been approved by the Directors, and the same had been sent to Mr. Loch, signed and sealed both by the Royal College of Veterinary Surgeons and the Highland and Agricultural Society.

The PRESIDENT explained the alteration that had been made in the supplemental charter, which was confined to a portion of the recital.

The Secretary read the following letter from Mr. Rice :—

GAYFIELD HOUSE, EDINBURGH ;
March, 1, 1879.

W. H. Coates, Secretary R.C.V.S.

SIR,—At date 19th ultimo I mailed to you letter, giving date regarding time of my entering the New Veterinary College and the American University from which my M.D. was taken. In letter of ante-date I begged early reply, telling me whether or not the M.D. could be recognised by you. At time of writing I am entirely without other information than that which I then possessed : am I to be wholly ignored, or will you extend to me the great kindness of information which will enable me to act understandingly?

I am, &c.,
F. E. RICE.

The SECRETARY stated that he had called at the Royal College of Surgeons, and also at the College of Physicians, and found that they did not recognise "the Vermont Institution."

Mr. FLEMING thought that Dr. Rice and the profession would see that the Council had not acted unfairly, but simply on information obtained from two of the most trustworthy and respected bodies in this country.

The PRESIDENT pointed out that Bye-law 47 provided only for students holding a diploma of any medical examining body recognised by law being eligible. He consulted Mr. Loch on the subject, and he was clearly of opinion that the Council had no power to admit Mr. Rice with any qualification which was not recognised practically by the College of Surgeons or the College of Physicians. He was sorry for it, but Mr. Rice could not be admitted under the existing bye-law.

A letter was read from Mr. Patrick Byrne, of Drogheda, a candidate for the diploma of the Royal College of Veterinary Surgeons, enclosing a certificate from Professor Gamgee, dated 1867; and requesting to be granted the same indulgence that had been given to Mr. Dick's pupils on a former occasion.

The SECRETARY stated that, on referring to the reports of the different examinations, he found that Mr. Patrick Byrne had never put in any appearance at any examination. The question was, whether the certificate could be admitted or not.

Mr. FLEMING did not think Mr. Byrne was eligible, inasmuch as the examining body was now differently constituted to what it was at that time. If he was to be examined a special board would have to be assembled.

The Secretary was instructed to reply to the effect that the applicant was not eligible for final examination.

A letter was read from Mr. William Dring, of Brixton, relative to his son, who had been rejected three times during his examination, and requesting that he might be allowed to present himself for re-examination in July next.

The PRESIDENT said he could not be presented for examination.

Examinations.

At the several meetings of the Court of Examiners, held for the "Pass Examination," on March 31st, 1879, nine students were rejected. On the

1st April six passed and three were rejected. On the 2nd of April twelve passed, making a total of eighteen passed and twelve rejected.

The PRESIDENT explained that the number of rejections was due to the old students coming up under the old system. As regards the three years' students, the result was very satisfactory indeed.

At a meeting of the Court of Examiners, held on April 3rd, for the "Second Examination," nine passed. On the 4th of April eight passed and three were rejected. On the 5th of April nine passed, and on the 7th of April seven passed, making a total of thirty-three passed and one rejected.

At a meeting for the "First Examination," held on the 8th of April, 1879, eight passed and four were rejected. On the 9th seven passed and three were rejected, making a total of fifteen passed and seven rejected.

The obituary notice was read.

Mr. FLEMING proposed the appointment of a small committee to consider a new form of register, the present one being, in his opinion, very defective.

Mr. COLLINS thought that the same committee which drew out the present register might revise it also.

The SECRETARY said that there would be a new committee appointed for the register in June next, when the committees for the year were appointed.

Mr. TAYLOR pointed out that in the proposed supplemental charter it was provided that the votes could be given either personally or by voting papers. He thought it would be a benefit to the College if every one were to vote by a voting paper only, as it would save trouble and turmoil at the annual meeting.

The PRESIDENT said it was not too late to make any alteration.

Mr. TAYLOR said that great inconvenience sometimes occurred when he was appointed scrutineer, in consequence of his not being present in the room to vote on certain questions on which he intended specially to vote. He moved—"That at all meetings of the said College all votes that are given for the election of the Council by members of the College must be given by voting papers in the form defined in the bye-laws of the said College, such papers to be transmitted under cover to the secretary of the said College not less than three clear days prior to the day on which the election is to take place."

Mr. DRAY seconded the motion, which was carried.

It was arranged that Mr. Loch be instructed to insert in place of Clause 3 in the Supplemental Charter, one which would carry out the views expressed in the above resolution.

Mr. FLEMING presented to the Museum a sample of "Warnecke's Horse Cakes," which was, he said, very valuble as a feeding stuff for horses during war.

Dr. VOELCKER presented a report on "The Adulteration of Food," and Professor Brown "The Annual Report of the Veterinary Department of the Privy Council Office, with an Appendix."

On the motion of Mr. DRAY a vote of thanks was awarded for the presentations.

The SECRETARY announced that Mr. Wm. Stanford Harrison, of Hertford, had forwarded by rail an interesting specimen of a "calf's head."

Mr. FLEMING moved a vote of thanks to Mr. Harrison, and that application should be made for a history of the case in order that it might be entered in the Museum book.

Mr. DRAY seconded the motion, which was carried.

A letter was received from Mr. Jenkins, secretary of the Royal Agricultural Society, enclosing a printed report on the subject of the letter from the secretary of R.C.V.S., dated March 25th, in regard to the recommendation of the Examiners of the Royal Agricultural Society's prizes.

(The report will be found in the proceedings of the Royal Agricultural Society, which appears in the present issue of the Journal.)

The report was adopted.

The SECRETARY read the following letter from Professor McCall:

VETERINARY COLLEGE, GLASGOW, *April 8th*, 1879.

DEAR SIR,—On the consideration of the President's motion, "That a candidate who fails in the practical examination, either for horses or cattle, be not further examined," owing to the near approach of the examination of our students it is impossible for me to be present. I trust that the President's motion may not be carried. I think that the passing or rejection of students may be safely left in the hands of the examiners, and as the student has paid a fee to cover the whole of the Examination, both practical and oral, he should be subjected to both tests. If a student is only defective in the practical and fully equipped in the theoretical and scientific, I do not think that such a student ought to be rejected. On the other hand, if the student is defective both in the practical and scientific, no sympathy should be shown, and the full extent of his defects made known to him.

(Signed) JAS. MCCALL.

The PRESIDENT said that the motion of which he had given notice was a very small question indeed. The fact was, that if a candidate got "Bad" in any subject, the Board of Examiners always rejected him, however good he might be in others. He might get an "Insufficient," or two "Insufficients," but if he got a "Bad" he was actually rejected. The practical examinations took place in the morning, and the result of these was known before the Court of Examiners met, and it was too much to ask them to go on with the examination of a young man whose rejection they knew of beforehand. There might be some advantages to the candidates themselves in going up for further examination; but as it was the invariable rule to reject all candidates who got a "Bad," and as by four or five o'clock in the afternoon it was known who had got a "Bad" at the practical, it seemed to him that their going up was a waste of time of the examiners.

In answer to Mr. TAYLOR,

The PRESIDENT said that the rule was that any one "Bad" always rejected a student; any mark below the whole examination "Minimum" was the same as "Bad."

Mr. TAYLOR said that students going through the old curriculum received a certain amount of education. It was no doubt imprudent for them to come up for examination unless they were thoroughly educated, but if they paid the fee asked, it was only justice and equity that they should be allowed to be examined on the whole of the subjects.

Mr. FLEMING said he felt the force of Mr. Taylor's remarks. In the first place there was a Chairman of the Board of Examiners, and there was also the Board of Examiners, who would decide as to the merit of each candidate in the evening; and it was a serious question whether the examiners who examined on the practical subjects in the morning should have the power, without the sanction of other members of the Board, to reject a student. In the second place, the student paid a certain sum to meet the expenses of the whole examination, and to stop him at a portion of his examination and say that he must not come up for the remainder, raised a rather serious question, which ought to be duly considered. He maintained that although a student was bad in his practical examination, and the examination afterwards ended in rejection, nevertheless, as Mr. Taylor pointed out, it had a certain amount of educational influence on the student and did him good; it was a serious question, inasmuch as it would throw on the practical examiners a good

deal of onus, which was at present borne by the whole Court. He did not think it would be much benefit to the College, though it would save a little by diminishing the number of students who came up for examination in the evening. It was a question, however, whether the students might not claim the right to undergo the whole of the examination, although they knew they would ultimately be rejected. Unless the bye-laws were materially altered, and the students were given to understand that they would have no claim to come up for the full examination, he did not think the Council had a right to refuse them such examination.

Mr. GREAVES thought he saw the force of the President's argument, that by telling the student when he had failed in his practical examination he need not go any further, and that even if he was examined by the whole of the examiners the one "Bad" of the practical examination would cause him to be rejected in the end. It would cause a good deal of waste of time and waste of money. At the same time he could see the force of Mr. Fleming's remarks, that it would throw the onus on the practical examiners, an onus which would probably be more than any two or three examiners would like to take upon themselves. He thought it was right that something should be done to impress upon the teachers as well as the students the great importance of the latter obtaining a practical knowledge, without which they would be rejected. If nothing else resulted from the President's motion, it would excite the feeling that it was absolutely necessary that a practical knowledge should be obtained on the part of the student, to a greater extent than was the case at the present time. He thought that the President's motion, with some slight alterations, would, if carried, be of very great importance.

The PRESIDENT thought that the feelings of the members of Council seemed to be generally against his motion, and he would therefore withdraw it. He had himself no feeling in the matter.

The subject then was allowed to drop.

It was arranged that the candidates for the Fellowship Degree should be examined immediately after the termination of the July examinations.

Members of Council.

The following gentlemen were proposed as Members of Council for the ensuing year:—

The President	Proposed	Mr. Dray and also Mr. J. Roalfe Cox,
Mr. Dray	"	Prof. Simonds.
Mr. Coates	"	Mr. James C. Broad.
Mr. Dacre	"	Mr. William Whittle.
Mr. Geo. Carless	"	Mr. T. Joseph Cartwright.
Mr. Batt	"	Mr. Jas. Moon.
Mr. Broughton	"	Mr. J. W. Anderton.
Prof. Pritchard	"	Mr. T. W. Gowing.
Mr. Greaves	"	Mr. A. H. Santy.
Mr. Gowing	"	Mr. J. M. Axe.
Mr. M. Clark	"	Mr. G. Balls.
Mr. Oatway	"	Mr. W. G. Flanagan.
Mr. Batt	"	Mr. F. W. Ragg.
Mr. Fleming	"	Mr. A. J. Owles.
Mr. Morgan	"	Mr. W. Robertson.
Mr. Moon	"	Mr. Geo. Williams.
Mr. W. Clark	"	Mr. Thos. Talbott.

It was agreed to submit the form of advertisement calling the Annual Meeting to Mr. Loch, for the purpose of ascertaining his opinion as to whether it was legally drawn up.

The SECRETARY announced that Mr. Gregory had enclosed a cheque on account of the defunct West of England Veterinary Medical Association for the College Fund, and asking a receipt of indemnity from the Council, which was accordingly sent.

Finance Committee.

The report stated that the vouchers and receipts for payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £120 15s. 3d., which the Committee recommended should be discharged. This would leave a balance at the bankers of £330 os. 5d.

House Committee.

The Committee reported that in accordance with the decision arrived at at the last meeting of the Council, the Secretary reported to the Committee that a trustworthy man and his wife had been selected to take charge of and reside in the College premises, occupying the basement and upper rooms, and that £20 was to be allowed them by the Secretary, a suite of rooms being given up for the enlargement of the Museum. The Committee also recommended that the interior and exterior of the College be cleaned and re-painted, and that an estimate be submitted to the Committee for the same.

Mr. FLEMING pointed out the injury that was being done to the specimens in the Museum from the mould that was growing on them, owing to the dampness of the rooms in which they were at present located, and proposed that they should be removed upstairs, where the rooms were dry and well lighted, and that the arrangement of the specimens be left to the House Committee. He also moved that cases be purchased in which to put the specimens, and that they be such as could be utilised in the new College building.

Mr. TAYLOR seconded the motion, which was carried.

On the motion of the PRESIDENT, seconded by Mr. Dray, the Report of the Finance Committee and the Treasurer's statement were received and adopted.

Cheques were ordered to be drawn for the current expenses, and for the postage of voting papers.

Mr. DRAY proposed Mr. Thos. Moore and Mr. James Broad, Junr., as Auditors. Mr. TAYLOR proposed Mr. Woodger, Junr., if required.

Messrs. Collins, Fleming, and Dray were appointed a Committee to draw up the Annual Report.

Messrs. Dray, Moon, and G. Williams were appointed the members of the Dinner Committee.

Mr. COLLINS then detailed the interview he had had with Mr. Noel relative to the obtaining the gratuitous use of one of the public buildings for the purposes of the College; but he said he was assured that none was available. It only remained to obtain from Government a grant of money, and it would be necessary, for the furthering of this end, that a committee should be appointed to wait on the Duke of Richmond.

After some conversation it was ultimately arranged that a deputation should wait upon his Grace shortly after Easter.

The Council then adjourned.

CENTRAL VETERINARY MEDICAL SOCIETY.

SPECIAL MEETING, February 12th, 1879. Professor AXE in the chair.

The SECRETARY read the minutes of the last meeting, which were confirmed. He afterwards exhibited a specimen of induration of the mammary gland which had been brought by Mr. Shaw. He also called attention to the case of a rat which appeared to have suffered from Scrofula. Both kidneys were much enlarged, as was also the spleen, and the abdominal viscera presented a "grapy" condition. He thought the science of comparative pathology might be considerably enriched by the study of morbid changes as they occur in such animals as the rat.

Some time ago he removed from the liver of one of these creatures a circular entozoon, having at one spot about twenty little hooklets. It measured over an inch in length.

Mr. BROAD said he once found a similar entozoon in the liver of a mouse.

Professor AXE said, from a casual examination he had made of the diseased parts, the gross pathological characters would favour the view taken by the Secretary, that the morbid growth in the several organs was tubercular. A microscopic examination of the structure would enable him to speak more definitely on the point, and he proposed to examine it the first opportunity.

The SECRETARY said he had received a letter from Mr. FLEMING, expressing his regret at being unable to attend the meeting; and also a letter from Professor Walley to the same effect. Professor Walley also regretted that, in dealing with the question of "Garget," Mr. Smee had not recognised in a becoming manner the researches of veterinarians, and likewise that Mr. Power had not sought the assistance of veterinary surgeons who might have given him valuable aid in his sanitary researches at Kilburn.

Professor AXE then addressed the meeting on "Garget in relation to Diphtheria."

He said: It will be in the knowledge of this Society that at a recent meeting of the Pathological Society of London, a communication was read from Mr. Power by Dr. Buchanan on certain observed relations between Diphtheria and milk, and that Mr. Smee also read a paper on the same occasion upon Garget in reference to the cow. Those two papers have been brought to the front by our medical and sanitary journals, and they have been largely discussed by the daily press. The conclusions to which they point have the highest interest for us, in their sanitary as well as in their pathological connections: and the general importance of the questions involved commend them to our most serious consideration. I may *premise* my remarks by saying that, in the spring of last year, an epidemic of Diphtheria fell somewhat heavily on certain parts of the sanitary districts of Hampstead and Marylebone; and that, in consequence, the Local Government Board was communicated with, and Mr. W. H. Power, a gentleman of the highest eminence in sanitary science, was deputed to inquire into the circumstances relating to the outbreak. It would appear from the weekly returns of the Registrar general that Diphtheria prevailed to a greater or less extent throughout the metropolis both at the time, before, and after the special outbreak referred to. In pursuing his inquiry Mr. Power found that the highest incidence of the malady was reached in the parishes of Kilburn and St. John's Wood, within a circle of half a mile radius, having its centre in the Abbey Road. Moreover the outlying parts of this circle furnished an excess over the incidence of the disease throughout the metropolis generally. It was further observed that the more intense incidence of the affection was not only circumscribed in area, but that the special cause, whatever it might be, was operative during a very limited time. In dealing with the personal relations of those first attacked in each household it was found that in only a

few instances had there been any direct exposure to infection from persons having throat illness. The great prevalence of the disease therefore in the circumscribed area could not be accounted for on the grounds of personal intercourse, and the cause was consequently sought for elsewhere. The possible contamination of water was disposed of by the fact that not only the invaded houses but likewise a very large district in which Diphtheria did not prevail, or only in a very small degree, were supplied from the West Middlesex Company whose water is pronounced to be as good as any in London. In dealing with the questions of public sewers and private drains it soon became obvious that in the infected area there were present, in all their force, the precise conditions known to favour the dissemination of spreading diseases. Indeed, sanitary science could hardly point to a more flagrant example of the subversion of its principles than that which the special disease area presented.

On this point Mr. POWER remarks: Under conditions of existing public sewage and private drainage the special area cannot have failed to have been repeatedly if not continually exposed to sewer and drain nuisances, for the liability of the main sewers to strangulation at their outfall under exceptional rainfall (such as prevailed prior to the outbreak) must have frequently conduced to extensive backing up of sewage, and penning up of foul air within the ill-ventilated sewers, and hence to forcible expulsion of the pent up sewer air, by the way of unventilated house drains, and inefficiently trapped orifices into the dwellings of the district. To put it plainly, the outbreak was one of a well-defined and localized character, and corresponded in its extent to the area of defective drainage. Indeed *primâ facie* there was a pronounced relationship between the unsanitary conditions and the event both in reference to time and space. The connection of the outbreak to the supply of milk was next considered. It appears that, in consequence of representations made to Mr. Power by Dr. Morton, special attention was directed to two sources, from which milk was largely supplied to the infected district. One being a dairy farm at Muswell Hill, and the other source, sheds in the parish of Kilburn. Both establishments are in the hands of one proprietor, but only in regard to cows and cows' food was there any community of circumstance. "As regards employés, general administration, and milk science, they were wholly distinct the one from the other." An account from the households supplied from the sources referred to was furnished to Mr. Power, and a strict inquiry was set on foot for cases of throat illness, over the lines through which the milk was distributed, and a very large percentage of cases was found to have occurred in houses supplied by it; but it is not stated whether Mr. Power pursued the same minute system of inquiry in regard to the distribution of milk from other dairies, nor does it appear whether bread and other articles of food, which must have been largely exposed to sewer air, were considered in their relations to the infected households. That to the milk, and not to the sanitary defects of the locality the outbreak was due, Mr. Power's figures appear to prove most conclusively; but before they can be regarded as reliable, it must be known that Mr. Power's inquiry dealt with the milk of all retailers alike, that he did not make house to house visitation in regard to the Muswell Hill and Kilburn milk, and accept the medical officer's report alone on account of houses supplied from other sources. Cases "so mild that their nature was rather inferred from their relation to other cases than from their own symptoms" are not such as would reach the medical officers, but they have been taken account of by Mr. Power, and would no doubt swell the numbers, as against the Kilburn and Muswell Hill milk, to formidable proportions. As to the means whereby the milk became infected no definite conclusion seems to have been arrived at. The water in use at Muswell Hill, while possibly exposed to foul soakage, was in

general use by the family at the farm, who continued in good health throughout the epidemic, although using, besides, the suspected milk. The Kilburn water was derived from the West Middlesex Company, and for reasons before stated is acquitted of having any concern whatever with the outbreak. The sanitary conditions of the premises, the general conduct of the business, and the manipulation of the milk and dairy utensils, reveal nothing suggestive of means whereby specific infection could have been brought about. At no time has Diphtheria been known to exist in any member of the two households concerned, although both young and old have drunk largely of both milk and water; and, moreover, I am informed on the best authority that in no instance has Diphtheria existed in the households of the several retailers who dealt out the milk, although in some instances they comprise large families of young children who partook of it daily in considerable quantities. In regard to the cows, I have had several interviews with the veterinary surgeon under whose medical care they are placed in sickness, and he assures me that at no time during the first six months of the year was any one of them the subject of Garget, or any febrile or other disease whatever likely to contaminate milk. Indeed, throughout the whole period during which Diphtheria prevailed, the two herds were in the most salubrious condition. Whatever explanation, therefore, be sanctioned as to the way in which the epidemic originated, these facts cannot be disregarded so long as milk is held to be in question. "As to health of cows," says Mr. Power, "it is affirmed that at neither place has serious illness occurred, but this affirmation does not exclude occurrence of cold or other minor ailment among cows." From this it would seem that the entire responsibility is centred in that common condition we term "cold," or in some other undefined minor affection, which may or may not have existence.

It is hardly necessary for me to urge the utter absence of data by which any possible relationship can be shown to exist between Diphtheria and cold, nor need I dwell on the overwhelming evidence which we daily experience to the contrary, and with which all are familiar. I now pass on to notice some observations of Messrs. Power and Smee, contained in papers read before the Pathological Society of London. In reviewing the history of milk epidemics, Mr. Power says, "In many instances in which a relation has been traced between milk distribution and enteric fever, there is no doubt of the disease being due to the dissemination of milk contaminated by impure water or air. There are other examples where such introduction of water or air has been but obscurely made out, whilst there remains a third class, where the intervention of infected air or water has seemed unlikely, and where the readiest explanation of the outbreak would be afforded if milk, apart from air or water, could be regarded as the source of the disease." In other words, the latter instances could best be explained by regarding the cow not merely as an incubator of the germs of disease peculiar to her, but as a real factor or generator also of those which only take effect in the human subject, as in Typhoid, Scarlatina, and the like. In the particular outbreak of disease in question, this assumption has been carried to its highest and most dangerous attitude, for dangerous it must be to brand a great source of food supply with malignant properties on evidence which is not only wholly of a negative character, but which is also of the most remote description. To accept the view suggested by Mr. Power, adopted by Mr. Smee, and so hastily acted upon by the Pathological Society, necessitates in a very great measure the abandonment of the germ theory of disease, and the acceptance of the doctrine of spontaneous generation. But before such a sweeping innovation can be entertained, it must be clearly shown that the failures so repeatedly met with in tracing out the sources of contamination are not due to a deficiency or misinterpretation of facts and phenomena.

Moreover, it is most likely that had Messrs. Power and Smee been better acquainted with comparative pathology, or sought to be informed by those who have made cattle diseases their special study, both chemically and experimentally, they would not have troubled the Pathological Society with a hypothesis that admits of the clearest refutation.

Passing to the question of "Garget," I need not trouble you with any details as to the pathology of the disease as it presents itself to us in an ordinary way, as I am perfectly sure that all of you are fully acquainted with it, Mr. Smee's assertion to the contrary notwithstanding. As, however, reference has been made by that gentleman to a *specific* form of "Garget," it will be interesting to refer to a recent outbreak of this type of the malady, as illustrating the entire absence of etiological, and indeed pathological relations also, between it and human Diphtheria. The facts are these. In January last, "Garget" appeared in a herd of eighty cows, forming part of a large London dairy. As in others of its kind, stall cows were every now and again being removed, while fresh "in calvers" were at the same time being imported. During eight weeks no less than twenty of the herd became affected with this form of Mammitis, and several of them so acutely that it was considered advisable to destroy them. Neither age nor condition conferred immunity, and pregnant cows, as well as stall milkers, and also those recently calved, were alike attacked. Cows recently imported in a perfectly healthy condition became affected in from three to five days after their arrival in the shed, thus fixing the incubative period.

A strict inquiry was instituted as to the system of milking, feeding, and general management, as well as to the sanitary condition of the premises. The operation of milking was carefully watched, and strictly performed; every care was likewise exercised to guard against the ordinary known causes of "Garget," such as mechanical injury, exposure, gastric disturbance, etc., but without producing any abatement in the spread of the disease. The food was changed more or less completely, and the general management rendered as complete as could be wished for, but with no good result. The sanitary condition of the sheds was as good as could be desired, and everything relating to health seemed to be as complete as the resources of a London dairy will allow. The progress of the disease was singularly rapid, and generally rendered one or more of the glands useless as milk-forming organs, and in several instances completely disorganised the whole.

The initial symptoms of the disease were essentially systemic, and consisted in rigors more or less severe, a staring coat, general dulness, and an impaired appetite. The internal temperature was exalted from two to five degrees, and in some instances this was associated with a brief attack of Diarrhœa. The pulse was increased in frequency and in fulness, and the general condition of the body denoted a febrile state. The secretion of milk was at first simply diminished, without having undergone any perceptible alteration in its physical properties. Soon, however, the mammary gland became hot and tumid, and the milk watery and laden with caseous flocculi. In a short time the gland became enlarged, tense, and painful to the touch, and masses of caseine and purulent matter formed the bulk of what could be obtained from it. Purulent infiltration of the diseased part quickly followed, and abscesses, varying in size and number in different cases, were developed in the structure of the organ. In some instances, pyæmic symptoms supervened on the local change, and necessitated the animal being destroyed. The gland structure was primarily involved. I mention this because in an article recently published in THE VETERINARY JOURNAL, describing several outbreaks of a similar nature which appeared on the continent, it is remarked that the teats became first diseased, and that the malady extended from them in the direction of the ramifications of the lactiferous sinuses and

ducts. That this form of "Garget" is of a specific nature seems to me in the highest degree probable, but that it has no etiological relations with Diphtheria is abundantly attested by the fact that, although for some time the chief bulk of the milk of this dairy must have been contaminated with that from the diseased animals, the district over which it was distributed continued as free from Diphtheria as any other part of the metropolis. If, therefore, this be the specific form of "Garget" on which Mr. Smee has laid so much stress, and to which by implication he has referred such dangerous properties, it is satisfactory to know that we are able to place so important a matter beyond the pale of doubt. It may not be pathologically precise to say that like always begets like, either in an anatomical or clinical sense, where disease is transmitted from the lower animals to man, or from man to the lower animals, and this for reasons that will be found in the diversity of structure and function, food and habits, and mode of life; but there is belonging to all these interchangeable disorders, as they exist in man and beasts, common characters and features which bespeak their relationship. Mr. Power points out that already we know of several diseases in the cow capable of infecting the human subject, and he cites the relations of Vaccinia to human Small-pox, of bestial to human Tuberculosis, and Anthrax Fever in animals to that of man, etc., all of which carry with them, from one creature to the other, the typical features of the group to which they belong. If this be so, then is it not to bovine Diphtheria that we should look for any etiological relations that may exist between the cow and human Diphtheria. Considering, however, the utter disregard with which comparative pathology has been viewed in this kingdom, it is not too much to assume that bovine Diphtheria, like many other animal diseases, is not yet known to human pathologists. That the milk of cows affected with this disease is not capable of originating Diphtheria in man, is shown by the facts I am about to relate. In January last an entire herd of forty milch cows became more or less affected with this malady. Ten of them suffered very severely, one died, and one was destroyed when in a state of collapse. The symptoms exhibited by them varied somewhat, according to the intensity of the attack. The more severe cases were ushered in with rigors and Diarrhœa, food was refused, the animals became dull and dejected, and the internal temperature was increased, in some instances three, four, or five degrees. The pulse was quick, and the respiration somewhat hurried. This was followed by great prostration, cold extremities, and a harsh, croupy cough. As the disease progressed the cough became more and more painful, and the breathing embarrassed. Foamy saliva fell from the mouth, the throat became enlarged, the movements unsteady, and the body tympanitic. Dullness increased as the disease went on, and culminated in coma. In the worst cases death was brought about by asphyxia. Some of the animals only exhibited a slight cough, with bronchial catarrh, and some small degree of fever. Such cases, which were in the majority, recovered in from three to five days. I regret to say that I had not an opportunity of making a *post-mortem* examination, but the gentleman in attendance kindly forwarded to me the larynx of the cow that was destroyed, which I have much pleasure in laying before you. When first removed, the false membrane, which is now seen to cover its mucous surface, was much thicker than it now appears, and more so in some parts than in others. When portions of it were removed by the forceps, which was readily done, the mucous layer beneath was found to be swollen, as was also the submucous tissue, and there was besides a general hyperæmic condition of the whole. The specimen before you is by no means an isolated one of the kind. Several such, occurring in calves, have been forwarded to me at different times from various parts of the country. Here is one of them exhibiting extensive Diphtheritic deposit on the mucous layer, as well as

inflammatory infiltration and necrosis of it, and the submucous tissue. I am not aware that attention has hitherto been called to Diphtheria, as occuring in bovine animals, and as yet nothing has been done to work out its pathological details. The great interest which attaches to this outbreak, as bearing on the question at issue, is centred in the fact that the milk from the majority of these cows was drunk by a large number of persons, and in no single instance has it produced the slightest ill effects. Whether the milk referred to by Mr. Power was or was not the medium by which the contagion was conveyed over the infected area is purely a sanitary question, and cannot be dealt with here; but that the disorder known as "Garget," either in its common or specific form, has any relations whatever with Diphtheria cannot, I think, be sustained in the face of the evidence I have laid before you. I cannot close these remarks without expressing my deep regret that members of the sister profession should pay so little regard to the teachings of comparative pathology, and it is still more to be lamented that those who aspire to authority, and walk in the ways of science, should deign to desparage the labours of a kindred profession. To say that "Garget" is "not much known to veterinary surgeons" is to proclaim an unpardonable want of knowledge of veterinary literature, and a culpable indifference to real authority. It is manifest that without the aid of comparative pathology, state medicine must continue to be a comparative failure, and the science of medicine, as a whole, weak and defective. The case before us has much interest for the veterinary profession, and points in a forcible manner to the necessity for watchfulness on our part over all matters relating to sanitary science, in which animal diseases are concerned.

Mr. MOORE said they were very much indebted to Professor Axe for his defence of the profession in regard to the unjust accusation which had been made against it. It was clear that those who accused veterinary surgeons of knowing nothing about "Garget" had not a great knowledge of veterinary literature. As the liver used to be the seat to which all diseases used to be referred, so milk at the present time is looked upon as the source of all infectious diseases. Why this should be so he could not understand. He had known calves to suck cows affected with "Garget" without suffering in any way from the effects of the milk. In Mammitis, arising from contagious ecxema, it was otherwise. He had seen cattle suffering from throat disease, the real nature of which he was not precisely acquainted with, as an opportunity had not occurred for examining them after death. He had likewise seen horses affected in the same way, when they were unable to swallow anything for several days, but they usually yielded to treatment.

Mr. FRASER said he must give himself the pleasure of saying one word. His experience of the medical profession was, that if they asked any information from their veterinary brethren they were apt to do it in a patronising way, and to receive the statements with something like qualification, as though they thought the profession incompetent to form a judgment on the facts they observed, or of building up any theory. When the subject was brought before them, he confessed the impression made on his mind was one of surprise. He could not understand how any medical man acquainted with the rudiments of medical science could suppose there was any connection between Mammitis and Diphtheria. He spoke from his experience, and he had seen a considerable amount of Mammitis. And yet he could not remember it to have presented itself in a form that could be called epizöotic. In his neighbourhood there was an outbreak of Diphtheria, and in some stables where he attended Mammitis existed. When he returned home he should endeavour with considerable interest to trace any connection between the two. There was only one medical man in the town in which he resided with whom he could freely converse on the matter; but, for the most part,

medical men gave the cold shoulder to their veterinary brethren. He could honestly say that he had that night received a great deal of information from the President; and he was quite sure that the papers read in that room must be very instructive to those who had the opportunity of hearing them.

Mr. MOORE was surprised to know that bad sewerage prevailed in St. John's Wood.

Mr. SHAW said they were very highly indebted to their President for his able address. He would propose that the meeting be adjourned, so that the discussion might be fully entered upon on another occasion. He had seen several cases of Garget; but in those he had seen there had been very little milk at all, and the cow-keepers mostly milked what dregs there were on to the ground, and put a calf on to the animal on purpose to draw it all away.

Mr. HANCOCK seconded Mr. Shaw's proposition for an adjournment, thinking it probable that some Fellows, not in attendance, would like to say something upon the subject.

Professor AXE said he had no desire to prolong the question, but he thought there was a large quantity of useful information to be acquired by so doing, some points then occurred to his mind, and if the adjournment were decided on, he would take the opportunity of introducing to the society sections of diseased and healthy glands.

On the vote being taken, it was decided to adjourn the subject to the next meeting.

Mr. JOHN GERRARD, of Romford, Essex, was proposed as a Fellow.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting and Dinner of this Association was held at the Blackfriars Hotel, Manchester, on the 26th of February, 1879, W. Dacre, Esq., President, in the chair, the following gentlemen being present:—Professor Williams, New Veterinary College, Edinburgh; T. A. Dollar, London; Messrs. Greaves, P. Taylor, T. Taylor, J. Lawson, W. A. Taylor, T. Hopkin, E. Faulkner, A. Lawson, J. B. Wolstenholme, and J. O. Martin, of Manchester; J. Welsby, Liverpool; J. B. Taylor, Ashton; H. Furgusson, Warrington; E. Woolner, and C. D. Ashworth, Heywood; W. Whittle, Mosley; M. E. Naylor, Wakefield; W. G. Schofield, Pontefract; H. J. Cartwright, Wolverhampton; A. Darwell, Northwich; J. Bunnell, Oldham; P. Walker, and Parlane Walker, Bradford; and S. Locke, the Secretary.

Letters of excuse were received from Professors Pritchard, McCall, and Walley, Messrs. G. Fleming, D. Hutcheon, M. J. Harpley, S. F. Falding, W. Broughton, J. Cuthbert, J. Gerrard, J. W. Axe, R. H. Ringe, 5th Dragoon Guards, and many others.

The PRESIDENT, in delivering his inaugural address, said:—Gentlemen,—You are doubtless aware that the delivery of inaugural addresses is becoming somewhat unfashionable, but I am sure you would not like the meeting of this day to pass over without some formal recognition. At the same time, I have no intention of detaining you long from the social pleasures that await you above stairs, and I propose (digressing as little as possible) to confine my remarks to the past work and future prospects of Veterinary Medical Societies at large, and the Lancashire Association in particular.

As you already know, gentlemen, we have just passed through one of the most eventful periods in the history of our profession, and at last get a glimpse of the silver lining of the dark cloud that has so long cast a shadow over the path of professional progress. Imperfectly acquainted, as I am, with the political aspects of the profession, I cannot speak with any great confidence or authority on this subject, and I beg you will correct me if an

error should creep into the few remarks I have to make. It will be in the memory of many members that, up to the last two years, the political influence of Veterinary Medical Societies was *nil*; and, as a matter of fact, the provincial members of the profession were unrepresented in our parliament. Few changes took place in the Council Chamber, and the only new blood infused into this semi-fossilized body was the access of a Metropolitan practitioner, on whose lips the word "provincial" was a sneer, or the election of an Army Veterinary Surgeon, who, from his position in life, was not acquainted with the requirements of the general practitioner, nor capable of representing him at the Council Board. Professor Huxley has said, "That the heads of colleges have not the reputation of being the most mobile of persons"; but at last the authorities in London gave us what in justice we ought to have had sooner, viz., the vote by proxy; and to show you how eagerly the members of Veterinary Societies grasp with a firm hand any means of advancement that offers, I have but to refer to the recorded triumph of the first election committees.

I cannot dismiss subjects of a political character without at least alluding to an accomplished fact, having a most important bearing on the future welfare of the profession, viz., the discontinuance of the examination of the Highland Society, and the amalgamation of the London and Scotch Schools. It is but a year ago that this consummation so devoutly to be wished for seemed as far off as ever, and the negotiations towards the removal of this stumbling-block in the path of progress seemed to be brought to a standstill. At this unfortunate juncture of affairs there stepped into the widening breach, a Lancashire man—a member of this Society, who by his diplomatic talent, his knowledge of the position, and the very able and conclusive arguments he brought to bear upon the subject, surmounted all difficulties, and finally was instrumental in bridging over what at one time seemed an impassable gulf. The work of this gentleman (to whom we certainly owe our most sincere thanks) was not accomplished without drawing down upon him the sneers of those who, entirely mistaking the motive by which he was actuated, accused him of having, by his conduct in the past been an obstruction to the very measure that, without his influence, might not yet have been brought to so happy a termination. Having then advanced so far, let us hope that the next important step may be towards the introduction of a penal clause into our Charter—and let that clause be so framed that it may be subject to none of those evasions of the law by which such clauses are so often rendered inoperative. The formal appointment by the local authorities of Veterinary Inspectors of districts is a tardy step towards the recognition of the public utility of the profession, and may lead to the organization of a Veterinary Sanitary Service as complete as that so long and ably advocated by our friend Mr. George Fleming. And now, gentlemen, let me turn to topics more congenial to my mind—the social and scientific work of Veterinary Medical Societies. I am sure that, with myself, you can look back with unmingled pleasure to the many friends you have made, and the many kindnesses you have received at the hands of those who, but for the social influence of these Associations, would have been strangers to you, or might even have been at enmity with you.

Although the meetings of these Societies should not be used for the ventilation of petty grievances or matters of a personal character, I am of opinion that they have been, and in the future will be, legitimately useful as arbitrators in cases of breaches of etiquette, etc. They should be regarded as a neutral ground, on which, without fear of partiality, explanations might be given and received; and I believe that upon investigation the missing link would be found joining, once more, the aggrieved members in the bonds of friendship and goodwill.

And now, gentlemen, in conclusion, let me say a few words as to the real functions of Veterinary Medical Societies. It was formerly the fashion in this, and indeed in other Societies, for the subject of the discussion to be brought forward in the shape of a long essay, rarely containing what I might call new knowledge, and seldom followed by an interesting or useful discussion. But we must remember that the production of new knowledge is an absorbing and difficult task, and beyond the power of the man distracted by the harassing demands of a private practice. But it is a comparatively easy matter for the ordinary practitioner to note any peculiar symptom or chain of symptoms, any pathological condition or *post-mortem* appearances, or the therapeutical action of any drug he may have been using; and it is the result of such observations, condensed into the form of a short practical paper, from which we have always elicited the most lively, useful, and intellectual discussions.

It must not be supposed from what I have said that I deprecate entirely the reading of papers of a more important character, and especially when they are written in the style of those recently read by Mr. Greaves and Mr. Gerrard, and Professors Williams, Walley, and Pritchard. And now while on this subject, I don't think it will be a healthy thing for this Society or any parallel one to rely upon extraneous aid too frequently; our feeling of self-respect should teach us that we have abundance of local talent to carry on the scientific business of the Society; and I here invite you one and all to support the officers you have elected, and make their task an easy one, by throwing aside all apathy and diffidence, and coming forward when required to contribute to the success of our quarterly meetings and the usefulness of the Society. And now, gentlemen, in conclusion, let me return my sincere thanks for the honour you have conferred upon me, and let me assure you that, as far as my small ability enables me, I shall show my appreciation of your confidence, and with your assistance uphold the dignity, usefulness, and wellbeing of this association.

Mr. T. TAYLOR proposed for membership Mr. T. A. Dollar, of London; seconded by Mr. P. TAYLOR, and carried unanimously.

Mr. T. GREAVES proposed Mr. F. Dunn, of London; seconded by Mr. T. HOPKINS, and carried unanimously.

Mr. S. LOCKE nominated for membership Mr. Henry Thompson, V.S. Aspatria, Carlisle; Mr. E. FAULKNER nominated Mr. J. O. Martin, V.S. Manchester; Mr. A. LAWSON nominated Mr. J. B. Wolstenholme V.S. Manchester. Mr. T. TAYLOR proposed Mr. F. H. Ridler, The Mall, Notting Hill, London.

Mr. PETER TAYLOR proposed that W. Whittle Esq., of Worsley, be nominated to represent this association in the Council of the Royal College of Veterinary Surgeons; seconded by Mr. T. GREAVES, and carried unanimously. Messrs. W. A Taylor, E. Faulkner A. Lawson, and T. Hopkin were duly elected an Electioneering Committee to forward the return of the above candidates.

The CHAIRMAN then intimated, before adjourning to dinner, that he would, with Professor Williams' permission, ask him to give his opinion as to the disease that the American cattle were suffering from, and said to be Pleuro-pneumonia. He understood that Professor Williams had had the opportunity of examining and making *post-mortem* examinations of some of the diseased cattle which arrived in Liverpool from America, per the "Ontario."

Professor WILLIAMS (who was received with applause) said he had seen over a hundred of the cattle slaughtered, and examined nearly all the diseased ones. In a few there were lung consolidations and pleural exudations, and, taking these lungs by themselves, one would, he thought, be justified in concluding the disease had been Pleuro-pneumonia. Even in these lungs, how-

ever, there were certain differences from what he was in the habit of seeing in the lungs of cattle killed for Pleuro-pneumonia in this country. The signs of inflammation were too acute, and a very acute and red pleural inflammation extended far beyond the lung consolidation.

In other cases, it was found that there were abscesses in the lungs; in others, cavities containing the *débris* of broken-down lung tissue and blood clots; appearances almost identical with what we had seen in the lungs of foreign horses after a rough passage even from Hamburg to Leith; and in others there was no lung consolidation, but pure and very acute pleurisy; and in some—in its first stage—mere redness without exudation.

Then the cough of the living animal differed from that of Pleuro-pneumonia Contagiosa—being much more painful and pleural. The cattle had undoubtedly been subjected to some severe cause or causes of chest disease, and taking the whole circumstances and *post-mortem* appearances into consideration, he would hesitate very much before giving an opinion that the disease was identical with Contagious Pleuro-pneumonia. At present he was much rather inclined to think that the disease resembled what he had often witnessed, viz., sporadic Pleuro-pneumonia, arising from exposure, or even from truamatic causes, such as penetration of the lung by a foreign body. He had also frequently seen Pleuro-pneumonia with well-marked pleural adhesions after an accidental introduction of food or medicine into the trachea.

The members and guests afterwards sat down to an excellent dinner, at which all the patriotic and other usual toasts were ably proposed and responded to, and a very enjoyable evening was spent.

SAM. LOCKE, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Medical Institute, Hope Street, February 14th, 1879, Joseph H. Welsby, Esq., President, in the chair.

There were present, Messrs. Morgan, Reynolds, Elam, Moore, J., W., and T. Leather, Lloyd, Simpson, Stevenson, Townson, Cane, Kenny, and Wilson, Liverpool; Professor Pritchard, Royal Veterinary College, London; Messrs. Talbot and Rowe, jun., London; T. Greaves, P. Taylor, T. Taylor, W. A. Taylor, T. Hopkins, S. Locke, E. Faulkner, and M. J. Roberts, Manchester, Wm. Whittle, Warsley; W. Woods, Wigan; H. Ferguson, Warrington; W. G. Schofield, Pontefract; D. Somerby and James Freeman, Hull; J. S. Menzies, W. H. Roughsedge, and W. Dixon, St. Helen's; P. E. Rothwell, Woolton; J. Storrar, Chester; W. Dacre, Altrincham; J. S. Carter, Bradford; Darwell, jun., Northwich; several friends and the Secretary.

Letters of apology for non-attendance were received from Professor Axe, Messrs. A. B. Proctor, W. Lewis, A. H. Santy, N. Barron, J. and H. Lawson, H. J. Cartwright, H. Barnes, W. A. Cartwright.

The minutes of the previous meeting were read and confirmed.

The PRESIDENT then delivered his inaugural address. He commenced by thanking the members of the Association for the honour they had conferred upon him in electing him their president for the year, and trusted that no shortcomings of his would mar the usefulness of the Association. He said: There are so many introductory addresses now at our Colleges and Veterinary Societies, that if I were inclined to be lengthy in my remarks to you this evening I should have some difficulty in finding ground that has not already been fairly trodden. And besides which, I feel sure that you will agree with me, considering that we have here our esteemed friend, Professor Pritchard,

that our time will be occupied with far more pleasure and profit in listening to his lecture. I consider that the two most desirable objects of these Associations are—the social elevation of its members and the advancement of knowledge.

It is daily becoming an acknowledged fact that our profession is of very great public utility and importance, not only because our pleasures often depend upon the maintenance of the health of the horse, but without him man could not have reached the present state of civilization, nor have been able to overcome the numerous obstacles to comfort and happiness; also, and chiefly, because the health and sustenance of ourselves are intimately associated with the prevention among, as well as devising and carrying out hygienic regulations in relation to the flocks and herds upon which we depend for our daily food.

Many changes have taken place in our profession during the past year; the most important, to my mind, is the union that I suppose is about concluded between the holders of the Highland Society's certificate and the Royal College of Veterinary Surgeons.

This, I think, will be the means of doing away with feelings on both sides that have been antagonistic to each other for a number of years, and wherever such exists progress is sure to be impeded. We shall now be all one with the Royal College of Veterinary Surgeons, which is the only chartered institution in Great Britain and Ireland that has the authority to grant diplomas to students attending recognised schools, and which is not strictly an English Institute but a national one. Therefore, let us hope that with our united efforts the science and art of veterinary medicine may advance and flourish, and that we may be able to obtain powers to protect our interests by preventing unqualified persons from assuming the title of Veterinary Surgeon.

In alluding to the Contagious Diseases (Animals) Act which has just come into operation, the veterinary profession has received much more recognition than in the Act of 1869, and with just claim to it. In the framing of the Act our profession was consulted far more than in the previous one, showing clearly that our usefulness is becoming more appreciated, more appointments have been made, but it is much to be regretted that those appointments under the different local authorities should not have been distinctly defined by the Act, that gentlemen only possessing the diploma of the Royal College of Veterinary Surgeons, or the certificate of the Highland Society, should have been eligible, whereas, in some instances, unqualified practitioners are appointed.

This being our first meeting of the year, I cannot allow the opportunity to pass without alluding to the deaths that have occurred during the past year, numbering nearly forty, some of whom were intimately associated with all of us.

It has pleased Him in whose hands are the issues of life and death to remove from amongst us two of our own members—the late Mr. Wm. Elam, and the late Mr. Gilbert Heyes; let us share the consolation that our departed brethren have been exalted to a higher degree than they could have attained to in this sublunary sphere, and to quote the words of a certain author, "that having thrown themselves upon the mercy of their Creator and Judge—in full reliance on His gracious promises—they have been enabled to pass through the ark of redemption to the presence of Him who is the great "I am," the alpha and omega, the first and the last.

Before sitting down, permit me to say one word. Let us hope that the good work which we have met here for to-night may be continued, and that each meeting may prove more pleasurable and profitable than its predecessor. And I venture a word of entreaty, which is this: that it rests with you

to make it so, by your regular attendance and zealously assisting us in advancing its welfare in every way possible, remembering the motto inscribed on the seal of our body corporate, "*Vis unita fortior.*"

The SECRETARY read the report of the Committee of the Fleming Testimonial Fund. Twenty-six subscriptions had been collected by the Committee, amounting to £24 17s. 6d., which had been forwarded to the Secretary of the Central Committee in London, from whom an acknowledgment had been received.

It was unanimously resolved to nominate Mr. Wm. Robertson, F.R.C.V.S., Kelso, as a candidate for a seat at the Council of the R.C.V.S. at the next election.

Professor PRITCHARD then delivered a lecture on the "Pathology of Curb, its Causes and Treatment." He apologized to the members for not having written a paper on the subject, the reason being that during the short period that intervened between giving his consent to their President and the date of their meeting, his time had been fully occupied.

In reference to the subject itself, he said that they would naturally wonder why he had selected for their consideration such a well-known, every-day disease as Curb, one with which they were all so familiar, and upon which nothing very new could be expected, even from a professor.

He, however, expressed a hope that before he had finished his remarks upon the subject he would be able in some measure to jnstify his selection of such an apparently simple pathological condition as Curb was supposed to be.

1st. The position of Curb. All know well that it is situated on the postero-inferior part of the hock.

2nd. The pathology of Curb. Some structure affected with sprain; the question being, What structure is sprained?

Some say that it is the calcaneo-cuboid ligament; others the tendon of the flexor pedis perforatus; others the annular ligament at the back of the hock; and others the synovial sheath of the tendons of the perforans and perforatus. The differences of opinion recorded in early veterinary works as to the structure affected are just as great as we find expressed in more modern veterinary works upon the subject.

Now, I hope to be able, in the first place, to show you that there are no satisfactory reasons for accepting some of these theories, and in the second place I will endeavour to point out the true site of the disease.

But in order to render my description as clear as possible, I will briefly describe the structures situated at the postero-inferior part of the hock.

There are the tendons of the perforans and perforatus, which at this point pass down in close promixity to each other, there is the strong fibrous ligament at the posterior part of these structures—the so-called annular ligament, and the strong band of ligament extending from the apex of the os calcis to the cuboid and external metatarsal bone, the calcaneo-cuboid ligament.

Is Curb sprain of the calcaneo-cuboid ligament? I answer, No. This is one of the strongest ligaments of the body, its functions being to assist in holding the calcis in its proper relative position to the other bones of the hock, and to deal with the strain put upon the calcis which is considerable at times on account of that bone affording a point of leverage.

Had this important structure become sprained—partially lacerated—recovery would seldom or never take place. But in addition to the calcaneo-cuboid, we find strong interosseous ligaments which assist in retaining the os calcis in its position; and I opine that any force that would bring to bear such a strain upon this part as to lacerate the calcaneo-cuboid ligament, would also so sprain the interosseous ligaments as to set up an amount of

inflammatory action that would give rise to articular disease, and that would tend to make almost every case an incurable one.

Then there is the position of the enlargement exactly opposite the lower extremity of the calcaneo-cuboid ligament. Now, why should it always occur here, if it is the ligament that is affected? The ligament is as strong here as at any other part, and the strain upon it is no greater.

Then, again, if this ligament be the site of the disease, the enlargement would always be nearer the outer side of the hock than the inner, and my experience is that the enlargement, if anything, favours the inner side.

But why should this ligament be supposed to be the site of the disease at all? for in no *post-mortem* examination of Curb that I have made, have I ever found it in the slightest degree involved in the disease, which certainly would be so if diseased action had ever taken place in it; for in sprains of similar structures such as the superior sesamoideal ligament, we find an infiltration of lymph into its structure, with considerable external deposit, which never entirely disappears. Why should not the same result follow sprains of the calcaneo-cuboid ligament, if it is really the structure affected in Curb?

Professor Pritchard here showed the members several fresh prepared specimens of Curb, which, while pointing out the site of the disease, clearly showed that the calcaneo-cuboid ligament was in no degree involved in the diseased action.

As to the theory that the annular ligament is the site of the disease: Annular ligaments seldom suffer from inflammation, unless caused by external injury, as in the knee or fetlock joint, or from an extension of the diseased action set up in other structures of the joint, very rarely from absolute sprain. Then why should it occur in the hock joint? There is plenty of room for the tendons to play, and it must be borne in mind that, besides these tendons, passing down in company with them there are the nerves going to the lower portion of the leg. If the annular ligament was liable to partial laceration from pressure put upon it by these tendons, what would become of such important structures as these?

But as in the case of the calcaneo-cuboid ligament, there is no evidence, *post mortem*, that diseased action has ever existed in the annular ligament in cases of simple Curb.

Then as to the theory that Curb is sprain of the tendon of the "flexor pedis perforatus," I may content myself with simply stating that, like the two theories above noticed, there is no evidence whatsoever on examination, *post mortem*, that this tendon is involved in the diseased action.

We may have sprain of this tendon, and also the tendon of the perforans where the tendo-subtarsal ligament joins it; but in no case of simple Curb have I ever seen the tendon diseased.

The Professor then referred to Percivall's theory of Curb, and also to that propounded by one of the old writers on the veterinary art, which, he said, came the nearest to his own, viz.: A sprained and inflamed condition of the synovial sheath placed between the perforatus tendon and the posterior annular ligament of the hock.

The Professor said, if we examine these synovial sheaths carefully, we find one between the perforatus and perforans tendons—one anterior to the perforans tendon, and one between the annular ligament and the posterior surface of the perforatus tendon.

My own opinion, said Professor Pritchard, is that Curb is sprain of that synovial membrane situated between the annular ligament and the perforatus tendon.

The inflammation and deposition may extend to the sheath between the two tendons, but the deposition first takes place in the former position. I

have examined them twenty-four hours after their formation, and have found the deposition in that particular position.

But you may ask, How does the synovial membrane become sprained? The tendons have free movement, and even when the limb is flexed with the greatest rapidity and to the utmost extent, both tendons work together, yet it must be put upon the stretch somehow before it can be torn.

The explanation is this: the synovial membrane is attached to the white fibrous tissue at the posterior part of the hock, and consequently allows of a certain amount of movement only, and when that is exceeded, sprain to a greater or less extent must occur.

The Professor then briefly enumerated the causes of Curb; the principal and immediate cause being extraordinary flexion of the hock—young animals being most liable to it.

The conformations of hock most disposed to Curb were those with a very short and straight os calcis, and the reverse. With regard to Curby hocks, he said this shape was due to an unusual development of the head of the external small metatarsal bone, sometimes mistaken for Curb, but easily distinguished from it by passing the finger down the centre of the back of the hock, to the inner side of the calcaneo-cuboid ligament, when no elevation will be felt, and the enlargement in such hocks does not appear when the hock is viewed from the inner side.

Treatment.—Reduce the inflammatory action by rest, and the application of tepid water intermittently; so as to allow of evaporation. This he preferred to the constant application of either hot water or bandages to the part. The after treatment to consist of blistering or firing, or both.

Mr. REYNOLDS said that their thanks were due to Professor Pritchard for his very clear and, to his mind, very satisfactory exposition of the pathology of Curb. He considered that it was very much wanted.

In reference to treatment, the course recommended by Professor Pritchard was perhaps the most scientific, but it was often found impossible to carry it out in ordinary practice. For instance, he remembered a case which occurred to himself soon after he left college. A country parson rode into their infirmary yard from the hunting-field one day in November, and asked him to examine and prescribe for his mare, which had sprained her hock. He recommended antiphlogistic remedies as a preparation for other treatment, when he was immediately met with the rejoinder, "Young man, you know nothing at all about your business. I want my mare to hunt next week." I never forget that, said Mr. Reynolds, and as a matter of practical experience, I have found that the application of a severe blister at once, continuing the animal at work, answers very well in the treatment of Curb. He preferred the Biniodide of Mercury ointment as a blister; and in reply to a question, said that he would continue to work the animal even if he was lame.

Mr. PETER TAYLOR expressed his warmest thanks to Professor Pritchard for his very valuable contribution towards the solution of the true pathology of Curb; but, nevertheless, he was inclined to differ from the Professor's view—that it was the synovial sheaths that were affected in this disease; for he said in inflammation of joints and all synovial structures, we find a greater degree of lameness than we ordinarily find associated with Curb; and, on the other hand, the lameness in Curb does not correspond to the size of the swelling; which led him to believe, nothwithstanding Professor Pritchard's very logical reasoning, that the synovial sheaths of the tendons were not the site of the disease, but that it was the calcaneo-cuboid ligament that was affected.

In reference to treatment, Mr. Taylor said that veterinary surgeons were asked by their client to cure his horse, and quickly; and the veterinary

surgeon who could the most readily comply with that request, was the one who would be the most highly appreciated. As to the formation of hock most disposed to Curb, he (Mr. Taylor) differed from Professor Pritchard; in his experience, a short os calcis rarely became affected with Curb, and even sickle-shaped hocks were often found to stand severe work very well, if carefully seasoned. As to whether a horse having a Curb was sound or unsound, he considered that if the inflammatory action had subsided, and the horse was going sound, he was practically a sound horse. He said he had a client who, at one time, bought all the suitable horses which he could find with Curbs; this gentleman's treatment was a strong application of ammonia, and constant work.

Mr. STORRAR said that he had a four year old colt at one time, which sprung a Curb while his son was riding him. This case somewhat confirms Professor Pritchard's view of the pathology of this disease; for there was a bursal enlargement on each side of the tendon of the perforatus. By rest it passed away in a few days, but returned on his being ridden again; he was then put to harness, and did not go lame after. He was of opinion, however, that in those cases of Curb where the form of the hock was altered the calcaneo-cuboid ligament was affected, and a great many such cases showed spavin as well.

Mr. DACRE said he had listened with very great pleasure to Professor Pritchard's lecture; it bore upon itself the stamp of original research. He, however, could not understand how synovial membranes could become sprained at all; they were loose, not attached at both extremities like a ligament, and he could not understand how an enlargement should be left when such a structure as a synovial membrane only was inflamed. Again, Curb has shown itself immediately after the animal has been pulled up. He was, therefore, still inclined to put the question, What is the true site of Curb? As to the question of soundness, he would consider the animal sound if he was going sound.

Mr. GREAVES said that he had listened with very great pleasure to Professor Pritchard's lecture, but he would have been even more gratified had the Professor been able to tell them how it could be effectually cured. The most useful knowledge to them was, how to reduce the swelling. Mr. Greaves then referred to the various modes of treatment, antiphlogistic, active blistering in the early stages, and firing, but he said neither of these methods were completely successful in effecting the removal of the swelling. The best application for that purpose which he had tried was a solution of the Oxymuriate of Mercury in Spirit of Wine. He was of opinion that Curb was hereditary, and could be formed without any injury at all, as he had seen them on animals which had not been out of the stable for some time prior to their formations. With regard to the prevention of Curb, he said he had a client at one time who would not hunt a horse unless his hocks were fired. Did Professor Pritchard think that firing strengthened a healthy hock in that respect? Also, would he favour them with his opinion as to the action of Iodine in enlargements of this character?

Mr. FREEMAN said that it could not be the tendon nor the calcaneo-cuboid ligament that was sprained in Curb, for if either was injured, the animal could not go to work again in a day or two. Referring to the opinion expressed by Mr. Greaves that curb was hereditary and could become developed while the animal was standing in the stable without any previous injury, he (Mr. Freeman) was of opinion that Curbs produced under such circumstances were caused by the animal slipping when getting up, etc. As to any gentleman who would refuse to hunt a horse unless he was fired on the hocks, he would ask such a gentleman, did he consider himself wiser than his Maker?

Mr. HOPKINS, like the other speakers, expressed the pleasure with which

he had listened to Professor Pritchard's lecture. He said it indicated independent thought and original investigation; and after describing the various characters and appearances of Curb such as the large diffused swelling, and the well defined small firm band, he asked, have we two kinds of Curbs, and is it the annular ligament that is affected in some cases?

Mr. CARTER said he agreed with Professor Pritchard as to the pathology of Curb. In treatment, he did not find that firing reduced the swelling; his practice was to blister and keep at work.

Mr. WILSON said, his mode of treatment was to put on a high heeled shoe and rest until the lameness ceased; then apply a solution of the Bichloride of Mercury in Spirit of Wine, formula, Hydrarg. Bichlr. 1 dram, Spt. Vini 4 oz.; one dressing produced a very thick scurf.

Mr. T. SIMPSON said he agreed with Professor Pritchard that it was the synovial membrane that must be affected in Curb; it could not be a weight supporting structure that was injured, as the animal could not then resume work so soon after.

Mr. W. A. TAYLOR said that he agreed with Professor Pritchard that it could not be the calcaneo-cuboid ligament that was injured in Curb, from its very attachments, etc. At college, he said, we were taught that it was sprain of the annular ligament. I think we are not far off the true site of the disease now. As to the subject of soundness, you may have a recurrence of lameness from the same Curb.

Professor PRITCHARD, in reply, said in reference to the theory that the calcaneo-cuboid ligament was the site of the disease, in his opinion if there was one theory less likely than another to be the true one, it was this; if it really was the structure sprained in Curb, he was of opinion that the patient would run a poor chance of recovering. In reference to Mr. Dacre's difficulty in understanding how an enlargement should be left when such a structure as a synovial membrane *alone* was sprained, Professor Pritchard said that when a synovial membrane is placed in the position of a sheath for a tendon or between a tendon and a ligament, it will allow of a certain amount of movement and no more; if this be exceeded laceration takes place, inflammation follows, and a quantity of lymph is thrown out which subsequently becomes organized. He very much doubted whether many of the cases of so-called sprain of the back tendons of the fore and hind legs are anything more than laceration of the synovial sheaths in connection with these tendons.

In regard to the reduction of the swelling by remedial measures, the Professor said there was a quantity of serum and fibrin effused in Curb, and he was of opinion that it was seldom completely absorbed; but he considered the application of the Biniodide of Mercury ointment preferable to Cantharides for this purpose, because, when not too strong, you can continue its application for five or six days in succession, without any risk of subsequent blemish; this produces a very thick scurf, which remains on a long time, and exerts a pressure which has a very beneficial effect. He did not believe that Curb was hereditary, but always resulted from an injury; nor did he consider that there were two kinds of Curb, but only different degrees, depending upon the extent of the injury originally inflicted. In regard to the idea that firing was beneficial as a preventive of Curb, he did not believe that firing strengthened a healthy hock at all, and it was an act of cruelty to practice it for that purpose.

The PRESIDENT then proposed that a letter of condolence be sent from the association to Mrs. Heyes, expressing the sympathy which the members feel for her in the sad bereavement which she has sustained in the death of her husband. This was seconded by the SECRETARY and carried unanimously.

The PRESIDENT then proposed a vote of thanks to Professor Pritchard for his kindness in coming down among them—especially on such short notice

as he was able to give him on the present occasion—and treating them to the interesting and instructive lecture they had just listened to. This was seconded by Mr. GREAVES and carried by acclamation.

Professor PRITCHARD, in reply, said that he was very much gratified by the reception which they had given him; he was aware that there had existed among the northern brethren a sort of reproachful feeling towards the Professors of the London College, because they had not come more frequently among them; but he begged to assure them that their absence was not due to want of will but to lack of opportunity. As an instance, he might tell them that he had to travel 140 miles by rail yesterday; that day he had arrived, and must return that night, as he had to start from London to Ipswich next morning at five o'clock. He thanked them for the kind appreciation which they had evinced in the subject introduced for their consideration, and he could assure them that to him it was ample reward for any little inconvenience he might have experienced, to be able to contribute something suggestive of thought to an association like this, and to be privileged to meet with its members.

A vote of thanks to the President terminated a very instructive and harmonious meeting.

D. HUTCHEON, *Hon. Sec.*

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

(Continuation of Mr. Greaves' Essay on "Germs." See page 298 of last month's Journal.)

Bacteria are germs that have become organisms, and are of different kinds; some of them are so minute that they are beyond the reach of all sense, requiring the magnifying power of a thousand diameters; some have motion, some of them have no motion; some are oval in form, some rod shaped, some exquisitely delicate filamentous fungi, some possess the contagious virus, others do not. Spores are considered the foliage or bloom of the straight rod-like bacteria; these cannot be originated by the normal tissues or juices, they must have been derived from germs in the external air, they are found to exist in many parts of the human body and in animals, never in the blood of healthy persons in life. These germinal matters in the air attach themselves to particles of dust floating in it—particles scarcely visible in ordinary light appear as motes in the sunbeam, or in the beam of an electric lamp; it is by the agency of these particles that they are conveyed from place to place. The numerous experiments conducted with vast care and exactness by Baron Liebig, Professor Tyndall, Professor Lister, Professor Roscoe, Mr. Pasteur, Dr. Burdon Sanderson, Dr. W. Roberts of Manchester, and other men, the most advanced thinkers of the present day, have proved (as I think) most conclusively that the "Germ Theory" is a reality. They show most satisfactorily that if an infusion or wet dead animal or vegetable matter at a certain temperature be exposed to ordinary atmosphere for a few hours, it will become peopled with numerous low organisms. These are bacteria; they are never produced spontaneously, but originate invariably from germs from the surrounding media. They appear in the form of spiral rods, which elongate rapidly; they are then observed to break in segments, each segment becomes a living organism; there are also numerous offshoots, these are called spores, they drop off and are each of them organisms; they have each the power of self-propagation and are endowed with wonderful activity. But if you take the same infusion or wet dead animal or vegetable matter at the same temperature and expose it to air carefully filtered, the aerial dust

and germs being effectually excluded, and the experiment conducted properly, you may allow such air to be in contact with it for days, weeks, and months, but no such phenomena will take place: showing that the germ in the air has been kept back by the filter, and that no other element exists that has the effect of producing organisms. This totally disproves spontaneous generation. But their experiments prove more than this; they prove most conclusively that no ferment, decomposition, or putrefaction can take place without the presence of these low organisms—"bacteria"; yea, these experiments go still further, they show that there exists a strong analogy, if not positive identity, between fermentation and several fevers; it is shown that they both obey the same laws exactly, there are certain stages which each has to pass through, viz., a certain period of incubation, then a period of active fermentation, and then a period of subsidence; nay, further still, it is shown that certain infectious diseases are dependent on specific organisms. If septic bacteria are the cause of septic æmia, if the spirilla are the cause of Relapsing Fever, if the *Bacillus anthracis* are the cause of Splenic Fever, the inference is almost irresistible that other analogous organisms are the cause of other infective inflammations and of other specific fevers. It is well known that Cattle Plague can only be produced by Cattle Plague germs, also Glanders Small-pox, Typhus Fever; it is known that the esential nature of Zymotic disease is fermentation, and all true fermentation is caused by the development of organisms. Alcoholic fermentations are caused by the yeast plant; this is simply a fungus, or a microscopic organism; it is capable of self multiplication and endowed with activity the same as other bacteria. These organisms, which serve to initiate the changes in question, are derived from a multitudinous army of omnipresent atmospheric germinal particles, which would seem to be always ready in number and in kind for every emergency. Thus it naturally follows if we can only exclude these special organisms we at once banish all fevers and inflammations which are dependent on them from our world. It will be perceived that issues of immense importance are involved in the consideration of this subject. Dr. B. Sanderson says that in all acute infectious inflammations we have microzymes (a species of bacteria) abounding in the exudation liquids, and also in the blood. Whenever these poisonous germs enter the system, whether by means of respiration, by the food, or by the skin, there they find a suitable medium, they germinate, and at once multiply indefinitely, creating in the system an amount of molecular disturbance (or ferment) in exact ratio to the state of predisposition or degree of susceptibility of the animal. If the quantity be small and the constitution strong and healthy, it may prove innocuous; but not so if the vitality of the subject has been reduced to a low point, having been living in impure air and upon unwholesome food. This brings me to the subject of

Contagion.—Contagion is considered not merely an influence, it is something substantial; it resembles solid, round, or ovoidal corpuscles, often quite structureless. It would appear to be something that is alive, it always presents itself whether suspended or diffused in aqueous or gaseous media, in the form of concrete particles, and never in that of a soluble chemical body or a gas; the power it acquires of originating a diseased process is one which it acquires by virtue of its having been a constituent of diseased but living protoplasm; it may spring from diseased tissue itself, or it may be dependent for existence on the tissue of independent organisms; contagion resembles the unformed ferment, as much as life. Dr. Wm. Roberts gives the name pathophytes to the organisms supposed to produce the phenomena of infectious diseases, and we know that this contagion can retain its virulent and infectious qualities obstinately for long periods, resisting all unfavourable and chemical conditions; it possesses a long enduring dormant vitality, it can get firmly fixed in and accumulate on the walls and floors of stables or other

places, and whenever favourable conditions supervene, its energy is liberated by the action of the proper stimuli, it will then crowd the air and prove itself as intensely venomous at as first. Professor Tyndall informs us that putrefactive organisms fail to produce any deleterious effect upon animal life in its healthy state, that the gases given off during putrefaction are not of themselves infective. Professor Tyndall, in "A Battle with an Infective Atmosphere," shows us this. The element of contagion is an essential part necessary to produce any contagious disease.

Let us for a moment contemplate a case in point. We see a virulent epidemic commence and rage in a certain district; the more intelligent persons of the place at once set about to ascertain the cause of it; in the majority of cases it is soon found out, and measures are immediately taken to remove it. In the meantime numbers of men and women have died, and large numbers of others imbibed more or less of the poison germs which have been generated in a given spot—atmospheric action on decomposing matter. Now does the epidemic cease the moment the original cause has been removed? No; and why not? It is because germs of the identical species or type are being self-propagated in each individual affected; thus each individual is a centre of infection, and a first source of poison-germs. It is invariably found that these infected persons give off those poison-germs that produce the identical disease, and no other disease, whether it be Small-pox, Typhus, Cholera, Cattle Plague, Glanders, or Farcy.

We will now just glance at the part germs play upon wounds, and the method advised to be adopted on this principle.

Wounds.—You have no doubt seen wounds in the feet of horses when at grass assume an unhealthy character, and in which you have perceived numerous live animalculæ called maggots; these are visible to the naked eye, but if the secretion from the surface of any wound, more especially if that secretion has been allowed to accumulate for a certain time, be placed under a strong microscope, it would be found to contain numbers of organisms that the naked eye could not discern; these are called bacteria. The process is brought about by what in surgical language is called the septic element, this at times gets absorbed, producing septicæmia, or blood-poisoning; this creates fever and a train of symptoms like a ferment; its counteractive agent is called antiseptic. The manner in which an antiseptic acts is by depriving the septic germ of its energy, if not also of its life. These septic germs are ever present in the atmosphere around us; they may not be contagious germs; joints and cavities may be opened and frightful wounds explored with comparative impunity, if only the air and the parts and all the surroundings are carefully deprived of these septic germs no evil result will follow, no tendency to decomposition, no inflammatory process is set up. The application of the antiseptic must be minute and complete in every detail, the wound, the instruments, sutures, bandages, the surgeon's hands must be entirely enveloped in the spray the whole time. We see that science has discovered agents which can deprive these dust-germs or organisms of their energy and action; amongst these applications are carbolic acid, carbolic spray, or Thmyol, one part to one thousand of water, etc.

Mr. W. Thompson read a paper at the last meeting of the Manchester Literary and Philosophical Society, on the construction of a room or a series of rooms free from germ life, proposed for use in the performance of surgical operations. He said his object in bringing his paper before the Society was to show what he considered to be a valuable application of a well-known principle: viz., that of filtering from the ordinary air the innumerable spores which are constantly found floating about in it, and so to arrange a room or series of rooms in which the air may be rendered optically pure. The practicability of producing and afterwards retaining in a room or rooms of ordinary

dimensions an optically pure atmosphere was suggested to him by the result of a large number of experiments which he had carried on during the last seven or eight years, but more especially from the results obtained from a series of experiments which he commenced about the beginning of this year on the cultivation of different fungi, the spores of most of which are found in large numbers floating about in our atmosphere. The results of these experiments, he thought, conclusively showed that ordinarily large rooms may be constructed and ventilated with filtered air by means of fans, so that flour paste, taken as a test standard, would remain in them free from fungous life; and he believed that such a room or series of rooms might be of great advantage in surgery, perhaps as a means of preventing spores from entering the wounds of patients, and so doing away with or lessening the onus put upon the antiseptic treatment, or in giving a better chance of success in serious surgical operations. The arrangements he suggested on a large scale are a long room or series of rooms in a line, at one end of which should be fitted a fan behind a good filter of cotton wool, a long pipe with a series of Bunsen burners set along it so that when all were lit a line or a sheet of flame would be produced which might be gently passed along and made to play on every part of the floor, walls, and roof of the room, beginning near the end at which the fan works, and going gradually towards the door. By this means any spores adhering to the walls would be destroyed, and no air could pass back to pollute the walls or floors which had been thus purified. A stove might be arranged at the door end of the room by which cotton garments to cover the ordinary clothes of the surgeons and attendants might be heated to a temperature presumably sufficient to destroy or paralyze the vitality of any spores which might have been adhering to them, and where the knives and other appliances used might be previously heated, and where water used in washing the wounds might be previously heated under pressure. With such an arrangement at an hospital it seemed to him that an interesting mode of investigation into some most important subjects might be commenced.

Disinfectants.—These are preparations used for the purpose of cleansing or purifying an impure and infected atmosphere. Although some may hold that it is against principle to deprive ourselves of some of our patients, still I hold it is our bounden duty to prevent, if possible, the recurrence of those diseases that are not amenable to treatment. This I maintain is the great end and aim of medicine, and I feel proud to see this principle so ably enunciated. In the opening address at the Royal Veterinary College the other day, Prof. Axe said, "If there is one subject in which the wisdom of recent reforms in our educational system stands out more boldly than another it is in the science of preventive medicine; it is here that laurels are to be won, but only by the patient, energetic, determined exercise of the highest culture we can command; it is a wide and varied field for the exercise of our powers of thought and one worthy of all our energies." I speak this to the honour of that gentleman and to the College in which he labours. To consider this section of my subject and grasp its full importance, we must remember we are doing battle with an insidious, inscrutable, and deadly enemy; all the knowledge we have gained by late experience has to be brought to bear upon it. There are two lines of tactics for us to take; the one is to openly attack it and destroy it, or else to put on armour, so to speak, and defy it. Let us consider the first proposition. We have ascertained what our enemy is, its nature, from whence it proceeds; we have also ascertained how it is to be met, and how it is to be subdued. We have seen how Professor Lister can rid the wound and all its surroundings of the septic element, and when operations are performed and wounds explored with the care and precision he describes there is comparitively speaking an immunity from danger. If that is true as to wounds, the inference is almost irresistible that the same may be achieved in the air of the stable and

hospital. There is good hope that appropriate antiseptics which kill these germs and bacteria outside the body, may also be found to exert a similar destructive power when they have gained access to the body, and may thus cure or mitigate some of the most serious and common diseases which attack men and animals. I am told by my friend, Mr. Thomas Taylor, V.S., Manchester, that he has achieved a great advantage, and has, he believes, rid an infected stable (in which a most malignant influenza-infection existed) of its infection. He considers that this gas destroys the germs or contagion in the air. In the stable he employed chlorine gas, or more properly speaking chlorous acid gas. He says: "I assure you it is a practical fact that in every place where I used it I had the very best success;" he further says, "it is a poisonous gas and great caution must be exercised; the horses must be removed from the stable during the fumigation, and not put into it again until all trace of the chlorous acid gas has passed away. The mode he adopts is this:—Place a vessel near the ceiling of the stable, some hydrochloric acid in it, drop into it a few crystals of chlorate of potash, make the stable as air-tight as possible; the gas being heavy will roll over the edge of the vessel, descend, and permeate the air throughout the stable, or you may use permanganate of potash instead.

In stables infected with Glanders and Farcy I have found great benefit from the use of coke fires in moveable grates. I light the fires outside the stable in order that the smoke and sulphurous fumes may pass off, and when white hot carry the grate into each stall for half an hour; it not only dries the stalls and the air, but it draws into it and consumes all the infected air in the stable; and an equally satisfactory result has been obtained for the use of crude carbolic acid fumes. I was very much interested in a lecture I heard given lately, at the Polytechnic Institution, London, by an eminent surgeon. He used carbolic acid vapour generated in a glass retort and spirit lamp. He announced it to be the most powerful and most certain destroyer of germs and infectious fevers known. I have used it in several stables, lately in two establishments in which they had lost seven horses each in a few days from Glanders. The manner in which I use it is this.—I pour about a tea-spoonful of crude carbolic acid upon some dull hot (not red hot) cinders on a shovel; if the cinders are too hot the acid ignites and a black smoke ascends; this is useless, the acid is burnt, but in the other case where the cinders are not too hot, a dense white fume is emitted. I carry this into each stall two or three times a week; it would seem that the dense white fume shrivels up and destroys the contagious germs—devitalises them. As to the second proposition, my friend, Mr. Tedbar Hopkins, the President of the Lancashire Veterinary Medical Association, has been in the habit of giving to all the healthy horses in a stable in which Glanders is known to exist, or is suspected to exist, hyposulphite of soda in one ounce doses in their water, and in every case so far as he has tested it, it has proved eminently satisfactory. His idea of it is this, that if you can saturate the system with a medicament that will act as an antidote to the Glanders poison, then such animals will possess an immunity from it and be protected. I speak it to his honour, he is at this moment instituting experiments with a view of proving this point. I am sure the best thanks and best wishes of the profession will be accorded to him.

I have now brought my subject to a close, and in conclusion, I may say, my only motive is to serve my profession. I do not despair, nay, I am sanguine that the time will come when an antidote will be found both for Glanders, Cattle Plague, Hydrophobia, Small-pox, Typhus Fever, Cholera, and the like special diseases. It may be found accidentally, but much more likely by persistent intelligent study. In urging this I am advocating the cause of humanity. Oh, that I could arouse in you a desire, a love for intellectual research, and that such research would attain this consummation! It would be the brightest and grandest triumph ever achieved by man.

EDINBURGH VETERINARY COLLEGE.

A MEETING was held on April 10th, in the Edinburgh Council Chamber, for the distribution of the medals and certificates won in the past session by students of the Dick Veterinary College. Bailie Cranston presided, and among the other gentlemen present were—Deacon-Convener Williams, Councillors Dryburgh, Hall, Turnbull, Tait, Reid, Macdougald; Dr. Donaldson, High School; Dr. Alexander Wood, Councillor Waldie, Leith; Mr. Mylne, Niddrie Mains, as representing the Highland and Agricultural Society; the Principal of the Dick College, Mr. Walley, and the following veterinary surgeons:—Messrs. Dun, Baird, Reikie, Cunningham, Aitken, jun. and sen., Knight, Kirke, Rutherford; Reid, Auchtermuchty; and Steel, Biggar. A number of ladies graced the assemblage.

Bailie CRANSTON, in opening the proceedings, congratulated the audience on the great success which had attended the past session of the College. The students, he said, were of a high class, and they had shown a degree of ability and industry that bade fair to uphold the fame of Professor Dick's foundation. The professors, also, had done their duty well; the institution had been admirably managed; and he believed that students and professors alike could hold their own with those of any other college.

Principal WALLEY then read a report, in which he stated, by way of accounting for the smallness of the number of students eligible for the final examination for the diploma of the Royal College of Veterinary Surgeons, that, owing to the changes which took place in the curriculum of studies three years ago, a larger number of students than usual took advantage of the opportunity then afforded of obtaining a qualification—that of the Highland and Agricultural Society—by a two-sessional course of study instead of three. The success of their students in the two last final examinations for the diploma of the R.C.V.S., also still further diminished the number of seniors, and an unusual amount of personal illness and loss of relatives had taken place among the students during the year.

The distribution of certificates, medals, and other prizes was then proceeded with, among the successful students being the following:—

Charles Rutherford carried off the Dick Trust gold medals for veterinary medicine and surgery, for chemistry, and for anatomy; the Highland and Agricultural Society's gold medal for the best general examination; and the Society's silver medal for veterinary medicine and surgery, for chemistry, for anatomy, for materia medica, and for physiology; the Dick Trust certificate of merit for proficiency in ordinary subjects of matriculation examination, and the Edinburgh Veterinary Medical Association's silver medal for the best essay of the session. George Mitchell obtained the Dick Trust gold medals for comparative pathology and for physiology; the Highland and Agricultural Society's silver medal for botany and comparative pathology. Councillor Waldie's prize, for clinical and practical work, open to second year's students, went to William Calvert; Principal Walley's prizes for clinical and practical work, open to first year's students, to Lionel L. Leach and J. A. Thompson; and, of amateurs' prizes, the Highland Society's silver medal to Frank Watt; and Principal Walley's certificate of merit to J. Brownlie, for proficiency in elementary pathological subjects.

Several of the gentlemen present took part in the presentation of prizes, and in doing so, took occasion to make some remarks befitting the occasion.

Dr. ALEX. WOOD, in presenting a medal for anatomy, offered congratulations on the success of the College, which owed so much to the personal exertions of Bailie Cranston. Those, he said, who knew Professor Dick, knew that he almost seemed able to detect what was the matter with a horse whenever he looked at it. The reason was that he had studied the anatomy

hich he had no competitor. A student, there-
atomy had laid the best foundation for his future
ught, greatly to be lamented that they had to
d for getting degrees. In the profession to which he belonged, they should not submit to allow their students to be examined by a board in London, or persons commissioned by them: they had their own examining boards in medicine and surgery; and he trusted the Council would never rest till they had an examining board in veterinary medicine situated in Edinburgh, which city was second to none in its knowledge of the branches on which veterinary medicine depended. (Applause.)

Dr. DONALDSON said he had had considerable experience in examining the veterinary students before they entered the College. The examination was not a particularly difficult one, still it was one which showed that those who passed it had received a good education. Year by year the character of the students who had come before him had decidedly improved. There had been a marked improvement in intellectual power, and last year the students who came showed that they had received not merely an ordinary education but a cultivation worthy of gentlemen. He had to add, in connection with this, that he had been very much struck with the character of the young men. They had all shown a determination to do their work honestly and well, and had acted in the most gentlemanly manner; and he had formed a very high estimate of the students who attended the Dick College. (Applause.) He thought such an examination was calculated to do great good to the profession. If the public was aware that veterinary surgeons were also thorough gentlemen and educated men, the profession would rise in its esteem; and if the character of a profession rose generally the fees rose too. (Laughter and applause.)

Mr. MYLNE, who presented one of the Highland Society's medals, said they must all lament the death of Captain Tod, who took so much interest in veterinary matters. The Dick College, he remarked, had long been intimately connected with the Society he represented, and he was sure that under the present most excellent management it would go on and prosper, and be an institution worthy of its founder.

Mr. FINLAY DUN said that in all the large towns of England, even to within a short distance of London, the men who occupied the highest positions, and had the greatest amount of practical tact, and were trusted in regard to the treatment and prevention of disease, were those who had been educated in Edinburgh, and had acquired the Highland and Agricultural Society's diploma, accompanied in many instances with medals such as were now being distributed. (Applause.) This proved the excellence of Scotch teaching. In the teaching of medicine and of veterinary medicine in Edinburgh there was a thoroughness and care, a practical bias given to the instruction, which he did not think was excelled anywhere else; and he thought that under the present management, with the present staff of teachers and such a number of fine young fellows coming up for their preliminary examinations, and with the extended period of study, and the determination to carry out a still greater amount of clinical teaching, the Dick College would continue to maintain its high standard of efficiency, and gather a still larger number of pupils. (Applause.)

At the close of the proceedings a vote of thanks was, on the motion of Principal WALLEY, tendered to Bailie Cranston for presiding.

Bailie CRANSTON, in acknowledging the compliment, intimated that he intended to present to the Veterinary Association a complete set of the *Veterinary Magazine*, ranging over the last thirty years.

The meeting then broke up.

NEW VETERINARY COLLEGE.

ON the 16th April, the presentation of prizes at the close of the session of this College took place in the large hall of the Institution. Major-General Sir Frederick Fitzwygram, Bart., occupied the chair, and amongst others present were—Principal Williams, Professor Vaughan, Professor Kitchin, Dr. Young, Dr. Stevenson McAdam, Professor McAlpine, Mr. Robinson, V.S., Greenock; Mr. Rutherford, V.S., Edinburgh; Mr. Aitken, V.S., Edinburgh; Mr. Balfour, V.S., Kirkcaldy; Mr. Finlay, V.S., Jock's Lodge; Mr. Mills, V.S., R.H.A.; Mr. Kirk, V.S., Edinburgh; Mr. Murray, V.S., Edinburgh; Dr. Mackay, Edinburgh; Mr. McGregor, L.S.C., and others.

Before proceeding to read the list of prize-winners, Principal WILLIAMS said he was glad to be able to state that the College had succeeded in the past year beyond his utmost expectations. No less than ninety-one students had attended the classes during the past winter session. In fact, the success of the College had been so great as to warrant him in carrying out a project which he had thought of for a great many years as one likely to be very beneficial to veterinary science. In his opinion veterinary surgeons, above all men, should have a knowledge of natural history. And his success had been such, as he had just now stated, as to warrant him in establishing a Natural History Chair. (Applause.) He had been fortunate in securing for the chair a gentleman well qualified to fill it. The class would be divided into two—botany being taught during the summer and zoology during the winter course. He felt sure this would enhance veterinary education to a very material extent, and he had no doubt the friends of veterinary science would assist him in carrying out what he believed to be a very valuable idea. (Applause.)

The distribution of prizes was thereafter proceeded with.

Medals given by the Highland and Agricultural Society of Scotland :—

Anatomy—Medal, Mr. James J. Fraser; Certificate of Merit, Mr. Thos. Caldecott.

Physiology—Medal, Mr. James Ingram; Certificates of Merit, Mr. W. O. Williams, Mr. J. J. Fraser, Mr. Geo. Sandeman.

Pathology of the Horse—Medal, Mr. John Carr; Certificates of Merit, Mr. Edward Leach, Mr. T. H. Lewis, Mr. Kay Lees.

Cattle Pathology—Medal, Mr. Edward Leach; Certificates of Merit, Mr. John Carr, Mr. T. H. Lewis.

Chemistry—Medal, Mr. W. Woods; Certificates of Merit, Mr. Graham, Mr. Greenhalgh.

Botany—Medal, Mr. A. N. Michaelis; Certificate of Merit, Mr. Harry Hunt.

Materia Medica—Medal, Mr. Canty; Certificate of Merit, Mr. T. Caldecott.

Two prizes given by Mr. Thompson, V.S., Aspatria, to the two students who pass the best test examination for the first Professional—awarded to Mr. Greenhalgh and Mr. Fred Cottam.

Prize of £20, awarded to the student who passes the best second Professional examination—Mr. Leach and Mr. Lewis, equal: £10 each.

Prize given by a few graduates of the College for "practical work"—Microscope, awarded to Mr. Lewis for best case of microscopical specimens prepared by himself.

Medal given by the Edinburgh Veterinary Medical Society for the best essay on "Equine Conformation"—Mr. Wilson; Certificate of Merit, Mr. Dickinson.

Medal given by a lady for best essay on "Pleuro-pneumonia"—Mr. Lewis.

The CHAIRMAN then addressed the students, giving them some practical

advice as to their future course in life. He said they could not all expect to obtain the blue ribbon in the veterinary profession, as his friend Professor Williams had done (applause); but still by honest industry and zeal each could work out for himself an honourable and useful career.

At the close a cordial vote of thanks was awarded to the Chairman on the motion of Mr. McGREGOR.

GLASGOW VETERINARY COLLEGE.

THE winter session at this institution terminated on April 16th, and on the 17th, 21st, and 22nd, the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the College. The candidates for diploma were also subjected to a rigid practical examination on horses, cattle, and sheep, selected and brought to the College for that purpose. The Board of Examiners included the following gentlemen:—Prof. Turner, Edinburgh University; B. Cartledge, Esq., F.R.C.V.S., Sheffield; W. Robertson, Esq., F.R.C.V.S., Kelso; G. Fleming, Esq., F.R.C.V.S., London; Alex. Robinson, Esq., F.R.C.V.S., Greenock; R. L. Hunt, Esq., F.R.C.V.S., Birmingham. The following gentlemen were also present as *ex-officio* members:—Principal M'Call, Veterinary College; Professors Knox, Cooke, M'Gill, and Macqueen, Glasgow Veterinary College. The diploma of the Royal College of Veterinary Surgeons was obtained by the following candidates:—Mr. John M'Dougall, Oban; Mr. Charles Currie, Brodick, Arran; Mr. Wm. Miller, Glenluce, Wigtownshire; Mr. B. P. Mahony, Templemore, Tipperary; Mr. John Hamilton, Blantyre; Mr. James Storrar, Chester; and Mr. William M'Quiston, Buchlyvie, Stirling. The following students were also examined for the second professional examination and passed:—Mr. Harry Mountney Hill, Somersal, Derbyshire; Mr. A. Milligan, Cornwall, Wigtownshire; A. P. Blue, Mearns; W. Stevenson, Howwood; A. Cochrane, Grangemouth; W. J. G. Johnson, Belfast; Richard Hughes, Llanarmon, Denbighshire; G. Pollock, Bridgeton, Glasgow; R. Stevenson, Newcastle-under-Lyne; T. Douglas, Fenwick, Ayrshire; E. B. M'Lay, Stirling; James Wyper, Glasgow; John Wright, Troon; W. Stewart, Glasgow; Thomas Bowie, Kilbarchan; Mr. Matthew Graham, Glasgow; and Mr. Robert Anderson, Glasgow. Medals granted by the Highland and Agricultural Society of Scotland—Prof. Allen Thomson, London; Prof. Clelland, Glasgow University; and Principal M'Call—and certificates of merit granted by the College were awarded in the different branches of study as follows:—Horse pathology (written examination)—Gold medal (Principal M'Call), Mr. James Storrar; silver medal (H. and A. S. of S.), Mr. John Hamilton: 1st class certificates, Messrs. Mahony and Miller; 2nd class certificates, Mr. Charles Currie. Cattle pathology (written examination)—Gold medal (Principal M'Call), Mr. Storrar; silver medal (H. and A. S. of S.), Mr. Hamilton; 1st class certificates, Messrs. Currie and Mahony; 2nd class certificates, Messrs. William Miller and M'Dougall. Practical examination of horses as to soundness, age, &c.—Gold medal (Principal M'Call), Mr. William Miller. Practical examination of cattle and sheep as to age, operations, &c.—Gold medal (Principal M'Call), Mr. Charles Currie. Junior Division. Horse pathology (written examination)—1st class certificate, Mr. Hughes; 2nd class certificates, Messrs. Wyper, Mountney, Bowie, and Bradley. Cattle pathology (written examination—1st class certificate, Mr. Wyper; 2nd class certificates, Messrs. Hughes, Blue, Mountney, and Bradley. Anatomy (special and comparative)—Gold medal (Professor Thomson), Mr. Thomas Douglas; silver medal (H. & A. S. of S.), Mr. William Stevenson; 1st class certificates—Messrs. Cochrane, Hughes, Rogers, and Creighton;

2nd class certificates—Messrs. Blue, Mountney, Wyper, Bowie, Freeman, and Gosling. Histology and Physiology—Gold medal (Professor Cleland), Mr. James Wyper; silver medal (H. & A. S. of S.), Mr. Harry Mountney; 1st class certificates—Messrs. William Stevenson and Thomas Bowie; 2nd class certificates—Messrs. M'Lay, Douglas, Blue, Bradley, and Hughes. At the close of the examinations Professor Turner stated that, in accordance with the resolution of the Council of the Royal College of Veterinary Surgeons, he had the pleasure of intimating that Messrs. M'Dougall, Miller, Blue, Mountney, Hughes, and Milligan had passed with "great credit."—From *Glasgow Herald*, April 23rd, 1879.

MONTREAL VETERINARY COLLEGE.

THE examination of the students of this college took place on March 27th, in the presence of a large number of professors and friends, conducted by the following board of examiners, appointed by the Council of Agriculture, P.Q. viz :—Alex Waddell, M.R.C.V.S., Quebec; Williamson Bryden, V.S., Boston; Noah Cressy, M.D., V.S., Ph.D., Amherst, Mass.; Arch. McCormick, V.S., Beauharnois; A. O. F. Coleman, V.S., Ottawa; Chas. Levesque, V.S., Berthier en haut; C. J. Alloway, V.S., Montreal; A. J. Couture, V.S., Montreal; Dr. Tetu, Riviere Ouelle, P.Q.

The standard of examination was unusually high, and called for expressions of approbation from the whole board, each student being highly complimented by the examiners on each subject.

The following is the result of the examinations :—

The first year students were examined in botany by Professor J. W. Dawson, LL.D., and the following passed successfully :—

E. J. Carter, Montreal; T. L. Martin, Dorset, Vermont, U.S.; B. D. Pierce, Springfield, Mass.; Chas. Ormond, Milwaukee, Wisconsin; J. B. Green, Yellow Springs, Ohio; R. Price, Montreal; N. P. Hinkley, Buffalo. French department—E. H. Brosseau, M.D., Professor, Victoria College, Examiner—Hilaire Bisaillon, St. Valentine, P.Q.; Honore Bergeron, St. Martin, P.Q.; Albert Trudel, St Genevieve de Batiscan, P.Q.

Chemistry—Professor Craik, McGill University, Examiner—M. S. Brown, Montreal; Wm. Jakeman, Chelsea, Mass., U.S.; Alex. W. Harris, Ottawa, Ont.; E. White, Montreal; Wm. McEachran, Montreal; P. Cummins, Quebec. French Department—Prof. D'Orsonnens, Victoria College, Examiner—Joseph Page, Lotbiniere, P.Q.

Physiology—Prof. W. Osler, McGill University, Examiner—M. S. Brown, Montreal; Wm. Jakeman, Chelsea, Mass., U.S.; Alex. W. Harris, Ottawa, Ont.; Wm. McEachran, Montreal; P. Cummins, Quebec. French Department—George O. Beaudry, Prof. Victoria College, Examiner—Joseph Page, Lotbiniere, P.Q.

The following students, who had fulfilled the full *curriculum* and passed satisfactory written examinations, were examined by the whole board, orally, and having given satisfactory evidence of their proficiency were admitted as members of the profession, viz. :—Isaac J. Miles, Charleston, Illinois, U.S.; W. L. Williams, Argenta, Illinois; Floret S. Thomas, M.D., Hanson, Mass., U.S.; H. D. McMartin, Montreal; Charles Winslow, Rockland, Mass., U.S.; D. Lemay, Bord a Plouff, P.Q.; M. C. Baker, Dunham, P.Q. French Department—Victor Theodule Daubigny, Lachenaie, P.Q.; Henri Audrain, Montreal; Alphonse Levesque, Montreal; Hector Bergevin, St. Timothe, P.Q.

At five o'clock a large assemblage of professional gentlemen, prominent citizens, and the majority of the members of the Council of Agriculture,

assembled in the lecture room of the College, to witness the distribution of the prizes and the conferring of the diplomas. Among those present we noticed the Hon. G. Ouimet, Commissioner of Public Instruction, P.Q.; Hon. S. Norquay, Premier of Manitoba; Hon. L. H. Beaubien, Rev. Father Pilot, W. W. Ogilvie, Esq., Professors Craik, Osler, and Bell, etc. Letters of regret for unavoidable absence were received from Hon. H. G. Joly, Premier of Quebec; Professor J. W. Dawson, Principal of McGill University; L. H. Massue, Esq., M.P., President of the Council of Agriculture; Hon. M. H. Cochrane, and others.

The Hon. G. OUIMET occupied the chair, and presented the prizes and diplomas, afterwards addressing the pupils, congratulating them and giving them advice as to their future careers.

Appropriate addresses were also made by Mr. Waddell, Professor Cressy, Dr. Tetu, Hon. L. H. Beaubien, E. A. Barnard, Esq., Director of Agriculture, Rev. Father Pilot, and others.

Professor MCEACHRAN took occasion to thank the Chairman and gentlemen who had favoured the College by their assistance, especially the Examining Board, many of whom had come a long way, and at considerable inconvenience. He concluded by advising the graduates ever to conduct themselves as honourable men and gentlemen, pointing out the influence their conduct would have on the profession and the College from which they emanated. He urged on them ever to act towards one another, and other members of the profession with whom they would come in contact, on the strictest rules of professional etiquette.

The following students were awarded prizes for proficiency:

Best general examination—A silver medal, the gift of the Council of Agriculture—English Department, W. S. Williams, Illinois, U.S.; French Department, V. T. Daubigny, Lachenaie.

English Veterinary Medicine and Surgery.—Senior class.—M. C. Baker, 1st prize, book; Materia Medica—W. S. Williams, 1st prize, book: Anatomy—Isaac J. Miles, 1st prize, book. French Department—Anatomy—1st prize, A. Levesque, book.

Second year—English—Veterinary Medicine and Surgery—Wm. McEachran, first prize, hypodermic syringe; Materia Medica, Wm. McEachran, first prize, clinical thermometer; Anatomy, Wm. McEachran, first prize, book; Physiology, M. S. Brown, first prize, book.

First year—Anatomy, Charles Ormond, first prize, book.

ROYAL AGRICULTURAL SOCIETY.

AT the monthly council meeting held on April 2nd, the Hon. W. EGERTON, M.P. (Chairman), reported that the following letter had been received and approved of:—

"Royal College of Veterinary Surgeons,
"10, Red Lion Square, W.C., *25th March*, 1879.

"DEAR SIR—The Council of the Royal College of Veterinary Surgeons have duly considered your letter relative to the prizes so liberally given by the Royal Agricultural Society for the encouragement of cattle pathology, and also the recommendation of the examiners for those prizes.

"The Council acquiesce in the recommendation, and suggest that the competition should be open to all veterinary surgeons who have passed with great credit in cattle pathology (written and practical), although they may not have obtained honours in other subjects.

"The Council think that such a scheme would tend to encourage the study of cattle practice among the students. This branch of veterinary

science is carried on with difficulty in London, as cattle are rarely, if ever, sent for treatment to the Royal Veterinary College. The Council, however, have been glad to learn that the Royal Veterinary College have lately made arrangements to send a class of students, under a professor, twice or three times a week to the Metropolitan Cattle Market, and also to the foreign market at Deptford.

"The Council also think, that the extension of time to two years after taking the diploma will act favourably in inducing young veterinary surgeons to study cattle practice after obtaining their diploma.

"I am, dear sir, yours faithfully,

"(Signed) WM. HY. COATES, *Secretary.*"

"H. M. Jenkins, Esq., Secretary,
"Royal Agricultural Society."

The Committee have to report that the services of the Inspector of the Royal Veterinary College have been required in five cases by members of the Society during the past month. The Committee have received from the College the following reports on the outbreaks of disease :—

"*March 23rd*, 1879.

"SIR,—I have to report, for the information of the Veterinary Committee, that during the last three weeks I have made three visits into the country for the purpose of investigating cases of disease affecting either cattle or sheep.

"One of these, and the only one now necessary to be published was on March 8th, when I inspected a flock of sheep, belonging to W. C. Morland, Esq., at Lamberhurst Court, Kent, among which several losses had recently occurred. The flock consisted of in-lamb ewes, 174 young ewes, and 30 old ones, which had been separate during the winter. At the time of my visit nine of the latter had died, and two of the former; several were ill, and fresh cases kept occurring day by day at shorter or longer periods, after giving birth to their lambs. The malady was precisely of the same nature, and had for its origin allied causes to those which were reported on by my colleague—Professor Axe—to the Committee at its last meeting. As in the instances therein named, so in these, medical treatment proved of very little worth when the disease was fully established. It was therefore to preventive measures that attention had to be given, and especially to such as would lead to a richer and healthier quality of blood being formed for sustaining the organism under the additional strain made upon it by the act of parturition. For this purpose the innutritious grass, upon which the ewes had been mainly kept during the whole winter, was ordered to be discontinued to as great an extent as possible, and its place supplied by good hay, chaff, cake, corn, and a moderate quantity of mangel. Salt was also ordered to be given with the manger-food, and good protection afforded against inclement weather by placing the ewes at night in a warm lambing-yard. These means have proved effective for good, and I have no information of other cases having very recently occurred.

"Enclosed with this report I send a communication from Professor Axe, giving particulars of an investigation he has made into an outbreak of Splenic Apoplexy among animals belonging to Mr. Stratton at Newport, Monmouthshire.

"I am, sir, your obedient servant,

"H. M. Jenkins, Esq., Secretary, "JAS. B. SIMONDS
"Royal Agricultural Society."

REPORT OF INVESTIGATION INTO AN OUTBREAK OF SPLENIC APOPLEXY IN A HERD OF BEASTS.

"This inquiry was instituted on the 14th of March, in response to a communication received from R. Stratton, Esq., The Duffryn, Newport.

"The disease first appeared on the 6th of March, in a two-year-old steer. This animal, with another, occupied separate compartments in a shed adjoining some yards, in which eighty other beasts of all ages were housed. In the early part of January last the steer in question was brought from a farm several miles distant and put up to fatten. In consequence of some temporary derangement of his teeth, mastication was much interfered with, which caused him to lose condition. An examination of his mouth led to the removal of the defective teeth, after which he rapidly accumulated flesh. To this sudden and extreme change in the condition of this animal I attribute the origin of the disease. After death the carcase was removed to an adjoining barn, and there opened in close proximity to a heap of turnips In regard to these turnips, inquiry showed that in the course of the *post-mortem* examination some of them became more or less covered over with the blood of the steer. Of these some were disposed of, but it is to be feared from subsequent events, that blood-tainted roots reached the cows in the yard adjoining the barn, as one of them became affected with the disease, and died five or six days afterwards. I had an opportunity of examining the spleen from the last-named animal, and subsequently of making a detailed investigation into the condition of the blood which it afforded. In this Anthrax organisms (*Bacillus anthracis*) were found in large numbers, and in the spleen Apoplexy, with its attendant disruption of tissue, were strikingly marked. The measures adopted for arresting the progress of the malady had reference to the sanitary condition of the premises, the quantity and nature of the food used, and the general management of the herd.

"Two days after my visit I was informed that another cow had died suddenly, but since that time I have reason to believe that no fresh cases have occurred.

"J. WORTLEY AXE,
"Professor of Pathology and Morbid Anatomy at the Royal Veterinary College."

Mr. DENT wished to call attention to a paragraph in the letter from the Royal College of Veterinary Surgeons, which stated that such a scheme as that recommended by them would tend to encourage the study of cattle practice amongst the students, and that this branch of veterinary science was carried on with difficulty in London as cattle are rarely, if ever, sent to the Royal Veterinary College for treatment. At the present time agriculturists were very much in the hands of veterinary surgeons with respect to the slaughter of animals for almost every kind of disease, and they were told officially, that in the education of veterinary surgeons they very rarely had an opportunity of seeing disease in cattle, sheep, and pigs. A wonderful improvement, it was stated, was about to be adopted by sending the students once or twice a week to the Metropolitan Meat Market and to the Foreign Market at Deptford! It struck him that this arrangement would be on a par with sending medical students to study human diseases by seeing people who attended markets and fairs. He was quite aware that since Colonel Kingscote and other gentlemen had become Governors of the Royal Veterinary College great improvements had taken place, and that efforts were being made to give veterinary students the requisite education; but would it not be possible for these young men to serve an apprenticeship with veterinary surgeons in the country before going the Royal Veterinary College? At present agriculturists were so much under the power of the Veterinary

Department and of veterinary surgeons, that it was extremely important that the study of veterinary science should be more carefully attended to in the future than it had been in the past He made these remarks in the hope that the Royal Veterinary College might propound some scheme to give their students further instruction, and he was confident that the Council would be prepared to render all the support they could both pecuniarily and otherwise.*

Colonel KINGSCOTE, C.B., M.P., agreed most thoroughly with every word which had fallen from Mr. Dent with respect to the great necessity of veterinary surgeons being competent in their profession, especially as regards cattle, sheep and pigs. The power now wielded by these gentlemen under the new Contagious Diseases (Animals) Act was very great, and it therefore behoved the Royal Veterinary College to put that education before their students which would fit them to exercise this power with discretion. As long as he had the honour of being a Governor of that College he would do all in his power to provide that the requisite instruction should be given, but it must not be forgotten that there were great difficulties in the way. The College now undertook to accept patients *gratis*, for the purpose of giving students an opportunity of seeing different diseases in various stages, but that offer had been very slightly responded to. He was not at all sure that the scheme of Mr. Dent, as to students being placed with veterinary surgeons in the country, might not be promoted by arrangement between the Royal Veterinary College and the Royal College of Veterinary Surgeons; at all events he would take care that the subject was brought before the Governors of the Royal Veterinary College.

The report was then adopted.

ROYAL COLLEGE OF VETERINARY SURGEONS' EXAMINATIONS.

AT the several Meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held during the week commencing March 31st, the following students from the Royal Veterinary College were admitted members of the profession :—

Mr. Thomas Pritchard	... ...	Hereford.
„ Henry Theakston	... ...	Burnley Hayton, Yorkshire.
„ George Sydney James	... ...	Frome, Somersetshire.
„ William Timothy Carmody	...	Brompton Road, S. Kensington.
„ Alfred Charles Turner	... ...	Croydon, Surrey.
„ James Mills ...	... ...	Hitchin, Herts.
„ Edward Simpson Shave	...	Stamford Hill, Middlesex.
„ John Davies Thomas	... ...	Ffoshilyg Llandyeril, Cardiganshire.
„ Joseph Bainbridge	... ...	Brough, Westmoreland.
„ William Frank Smith	... ...	Downham Market, Norfolk.
„ James Blakeway	... ...	Stourbridge, Worcestershire.
„ Titus Littler ...	... ...	Long Clawson, Melton Mowbray.

* The *Live Stock Journal* for April 4th has the following note on this discussion :—"It will be seen from our report that at the Council of the Royal Society on Wednesday last some strong things were said as to the present state of veterinary science and the utter lack of provision at the Royal College for the acquirement of a practical knowledge of cattle. We have more than once referred to the very defective education of many professors of the art. The status of veterinary surgeons is lamentably low, and if no better means are taken to raise it than those exerted by the Royal College, we fear it is not likely to be speedily improved. The proposal to send a 'class of students under a professor' to the Cattle Market two or three times a week is nearly equal to Sydney Smith's suggestion to scratch the dome of St. Paul's to tickle the Dean and Chapter!"

Mr. Henry Shaw	...	Hackney.
„ William Henry McCaldon	...	Oxford Street, Manchester.
„ William Robert Emery...	...	Totteridge Whelstone, London.
„ William Alston Edgar ...	...	Dartford, Kent.
„ Arthur Cox	...	Nottingham.
„ Charles Hedworth Golledge	...	Whaddon Trowbridge, Wilts.

Messrs. Turner, Mills, Thomas, Smith, Blakeway, Littler, McCaldon and Edgar, passed with *Great Credit.*

The following students of the same College passed their Second Examination at the Meetings of the Court of Examiners, held April 3rd, 4th, 5th, and 7th :—

Mr. Edward Harvey Kelly.
„ John Trevor Jones.
„ John James Crowhurst.
„ Alfred John Hickman.
„ Edward George Johnson.
„ Walter William Gulleford.
„ George Gartside Mayor.
„ Charles St. Lo. Wilkinson.
„ Walter Jas. Paige Palmer.
„ Edward Slipper.
„ Harry Chrichley Talbott.
„ Stephen Marsh Smith.
„ Thomas Wm. Cave.
„ Frederick Leeds Gooch.
„ Arthur William Briggs.
„ William Caudwell.

Mr. George Richd. Griffith.
„ Donald Gregory.
„ Thomas Jarvis Rippon.
„ George Henry West.
„ Thomas Skilton.
„ Arthur Samuel Auger.
„ Ernest Robert Harding.
„ William Frederick Garside.
„ Henry Thos. Wm. Salmon Mann.
„ George Deveson.
„ Theodore Charles Toop.
„ Sidney Villar.
„ Frederick Francis Woolcott.
„ Alfred Harris.
„ Charles Taylor.
„ Thomas William Lepper.

Mr. Herbert Alfred Towlson.

The following Students passed their First Examination on April 8th and 9th :—

Mr. James Hall Brown.
„ Thomas Bower Cockshoot.
„ Robert James Smith.
„ George Edmundson.
„ William Jas. Williams.
„ William Louden.
„ Arthur Broad.

Mr. Robert Samuel Barcham.
„ John Varney.
„ Edward Henry Scott.
„ Harry Redford.
„ Sydney Bright Price.
„ Charles Jas. Vyner.
„ Thos. Arthur Huband.

Mr. John William Barforde.

AT the several meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow, on April 16th and 17th, the following students passed their final examination, and received the diploma of the Royal College of Veterinary Surgeons :—

Edinburgh Veterinary College.

Mr. William Henry Hill ...	...	Sunderland.
„ Geo. Marshall Mitchell	...	Garvald Grange, Prestonkirk.
„ Charles Rutherford ...	...	Edinburgh.

Mr. Charles Rutherford passed with very great credit.

Edinburgh New Veterinary College.

Mr. Joseph Semple	Aberdare, South Wales.
„ Henry Vaughan Lloyd ...	Denbigh, North Wales.
„ Alexander McKenzie ...	Woodside, Keith, Banffshire.
„ Frederick Bridge	Birkdale, Southport.
„ John Henry Wilson	Edinburgh.
„ Edward Hugh Leach ...	Wigan, Lancashire.
„ Andrew Hume	Wormerlaw, Berwickshire.
„ Frederick Garside	Newton Heath, Manchester.
„ Philias Martial	Port Louis, Mauritius.
„ Edmund Woods Goldsmith...	Shipham, Norfolk.
„ Thomas Herbert Lewis ...	Crewe, Cheshire.
„ Thomas Barritt Stone ...	Swinton, Manchester.
„ John Carr	Parton, Northumberland.
„ Alfred James Jones	Eccles, Manchester.
„ John Legge	Island of Islay.

Messrs. Edward Hugh Leach, Andrew Hume, Frederick Garside, Edmund Woods Goldsmith, John Herbert Lewis, and John Legge passed with great credit.

Glasgow Veterinary College.

Mr. John Baillie Hamilton ...	Blantyre, Lanarkshire.
„ Miller	Glenluce, Wigtonshire.
„ Bernard Patrick J. Mahony ...	Templemore, County Tipperary.
„ James Storrar	Chester.
„ John McDougall	Oban, Argyleshire.
„ C. Douglas Hamilton Currie...	Brodick, Buteshire.
„ William McQuiston	Buchlyvie, Stirlingshire.

Messrs. Miller and John McDougall passed with great credit.

The following students passed their Second Examination :—

Edinburgh Veterinary College.

Mr. William Calvert.
„ C. Henderson Gentle.
„ William Ryan.
Mr. Christopher Black.
„ William Hill.
„ Alexander Grey.

Edinburgh New Veterinary College.

Mr. Harry Josiah Hunt.
„ James Walsh Canty.
„ Thomas Caldicott.
„ George Sandeman.
„ James Wood Ingram.
„ George Edward Nash.
„ William Swithinbank.
„ W. E. Smith Richmond.
„ Arthur Joseph Dobbyn.
Mr. Wharton Wm. Foster.
„ James Chalmers.
„ Frederick J. Richmond.
„ Archibald Munro.
„ George Whitehead.
„ John Richard Simpson.
„ W. Owen Williams.
„ Alfred Mority Michaelis.
„ Edward J. A. Currie Yorston.
Mr. James Johnstone Fraser.

Glasgow Veterinary College.

Mr. John Knight.
„ William Stewart.
„ James Wyper.
„ Thomas Bowie.
„ Alexander Milligan.
„ Allan Pollock Blue.
„ William Stevenson.
Mr. Alexander Cochrane.
„ Harry Mountray.
„ William J. G. Johnson.
„ Richard Hughes.
„ George H. Pollock.
„ Robert Stevenson.
„ Thomas A. Douglas.
Mr. Ebenezer B. McLay.

The following students passed their First Examination :—

Edinburgh Veterinary College.

Mr. Louis William Delacheroris.
„ Lionel L. Leach.
„ Clement Burston.
Mr. Geo. Marks Davey.
„ Thos. James Grum.
„ John Rogerson.
Mr. David Jones.

Edinburgh New Veterinary College.

Mr. William Irvin Roberts.
„ Walter G. Burnet Dickinson.
„ John Sydney Fredk. Cottam.
„ Arthur Fredk. Appleton.
„ Arthur Plant.
Mr. Thos. Archibald Mitchell.
„ Wm. Foster Greenhalgh.
„ Frederick Whittaker.
„ Harry Scowcroft.
„ Fredk. Huntington Osgood.

Glasgow Veterinary College.

Mr. Matthew Graham.
Mr. Robert Anderson.

Army Veterinary Department.

THE following intimation recently appeared in Divisional Orders at Aldershot :—"The Queen has been graciously pleased to appoint Major-General Sir F. W. Fitzwygram, Bart., to serve on the Staff of the Army in Great Britain, with a view to his succeeding Lieutenant-General Wardlaw in command of the Cavalry Brigade at Aldershot." Sir Frederick assumed command on April 1st.

Obituary.

THE following deaths of members of the profession have been reported to the Secretary of the Royal College :—

Mr. Richard Barrow, of Newmarket, a graduate of 1837.
„ Griffith Thomas, of Aberayron, Cardiganshire, who graduated in 1868.
„ John Harding Hughes, of Swansea, Glamorganshire, a graduate of 1866.

Mr. Robert Prentice, a holder of the Highland and Agricultural Society's certificate, died at Longford, Ireland, on March 3rd. Only a few days before his death, Mr. Prentice was presented with a very flattering address from the principal noblemen and gentry in and around Longford, bearing testimony to his skill, industry, and uncompromising integrity as a professional man, and of his high and honourable feelings in social life.

Notes and News.

CONTAGIOUS PLEURO-PNEUMONIA IN AMERICA.—An American paper states that the State Legislature and Governor of New York State have taken steps to prevent the spread of Pleuro-pneumonia. Ten thousand dollars have been appropriated for expenses, and authority has been given to Gen. Patrick, and Prof. Law, of Cornell University, to resort to stringent measures in order to extirpate the disease. The powers given to Messrs. Patrick and Law are—"To quarantine all infected stables; to slaughter all diseased animals; to quarantine all persons coming in contact with the diseased animals; to disinfect all cars and stables occupied by infected animals, and to prevent healthy animals from being brought into infected stables." The trouble is said to be confined to Long Island yards and stables, so far as is known, and "is the same disease from which the so-called swill-milk stables have been seldom free." The Pennsylvania Senate has unanimously passed a bill to stamp out Pleuro-pneumonia among cattle within the State. The disease is reported at sixteen places in ten counties of New Jersey alone.

SANITARY PRECAUTIONS IN AUSTRALIA.—The Colony of Queensland has formally revoked the Order of April 13, 1876, which prohibited the importation of cattle, sheep, and pigs from the United Kingdom, and her ports are now open to our live stock, subject to conditions of quarantine. Mr. Graham Mitchell F.R.C.V.S., has been appointed Port Inspector for Victoria.

DISEASE IN IRELAND.—According to a return issued on February 25, there were 3,996,027 cattle, 3,989,178 sheep, and 1,467,999 swine in Ireland in 1877, and during the same year there were 643,873 cattle, 631,159 sheep, and 585,427 swine exported from that country. It appears that there were 1,251 outbreaks of Pleuro-pneumonia, by which 2,397 animals were affected; of these 1,984 were compulsorily slaughtered, 213 died, and 182 were reported to have recovered from the disease. Of Foot-and-mouth disease there were 91 outbreaks, and 174 cattle, 16 sheep, and 141 swine were affected by it. Of these 14 cattle and 27 swine were reported to have died. There were 124 outbreaks of Sheep-scab, by which 1,887 animals were affected, and 28 were reported to have died. During the year there were no outbreaks either of Cattle-plague or Sheep-pox. One hundred and sixty-four animals were seized or detained on being presented for shipment, on account of being affected with contagious diseases.

ANIMAL DISEASES IN PRUSSIA.—Prussian live stock statistics show that during the official year 1877-78, 70 horses 1,903 beasts, 1,327 sheep, and 202 swine died of Anthrax; 18,589 beasts, 2,435 sheep, and 2,047 swine of Foot-and-mouth disease; 1,980 beasts of lung disease; 2,848 horses of Glanders; 3,888 sheep of Sheep-pox; and 1,302 sheep of Rot. Within the same period 571 dogs, 6 horses, 132 beasts, 38 sheep and 16 swine were put under control as suspected of Rabies; 137 dogs were killed as unowned and 1,089 as rabid.

CATTLE PLAGUE IN BOHEMIA.—The *Neue Freie Presse* says that the Cattle Plague is becoming more and more formidable in Bohemia. Several hundred places have been attacked by the disease. They are surrounded by a military cordon, and, as far as possible prevented from carrying on intercourse beyond its boundaries. The loss to the inhabitants of the districts is reported to be very considerable, and is not totally represented by that of the cattle slaughtered. Agriculture is in many places at a standstill, the cattle which serve as general beasts of burden being locked up wherever the disease appears. The plague is believed to have been introduced by several head of Russian cattle imported by a Galician dealer.

CANINE DISTEMPER IN SOUTH AFRICA.—I should advise men never to bring dogs of value to South Africa. Foreign-bred dogs invariably die of a hideous and, so far as I know, an incurable form of Distemper. . . . *Apropos* of dogs, a man of fancy could make an immense fortune in South Africa, by establishing a breeding and rearing-house, where pups could be watched through and over the sickness, when they would become of considerable value.—*The Transvaal of To-day.*

STURDY IN SHEEP.—The manager of a large Westphalian estate records the success attending a new method he has adopted of treating Sturdy in sheep, from which disease he has had very serious losses among his flocks for many years past. Formerly he had recourse to trepanning, but rarely managed to remove the cyst and its contents entire, and the number of cases successfully treated seldom reached ten per cent. Instead of attempting this, he now prefers to destroy the contents of the sac *in situ* by the injection of salicylic acid, and the results attending this practice appear to have been most favourable. The exact position of the cyst being determined, he thrusts into it an ordinary trocar, and after drawing off the fluid pushes a piece of salicylic acid about the size of a small bean into the cavity of the sac. Of ten animals thus treated nine recovered without a single bad symptom, though two of them were so far gone at the time of the operation they could no longer move. The death of the tenth appears to have been due to an ill-directed thrust of the trocar, which unfortunately penetrated the brain substance to a considerable depth.—*The Farmer.*

DISEASES OF THE BISON.—It is whilst in the low country that bison sometimes suffer from cattle diseases, through feeding in jungles used by infected domestic cattle. These epidemics are exceedingly fatal. The three most dreaded are called in Canarese: *Dod-róga*—"The great sickness;" *Kei-by-róga* — "Foot-and-mouth disease;" *Cheppay-róga* — "Shoulder-blade disease." The following are the symptoms of each:—*Dod-róga.*—The beast coughs once, the ears immediately droop, it stands listless, and will not graze. The coat becomes staring, violent purging commences, the evacuations being mixed with bloody mucus; there is much running at the nose and mouth, and the beast drinks to excess. Flies deposit their eggs about the mouth, eyes, and ears. It becomes rapidly weak and staggers. In from two to four days death generally ensues: some may live for a week. No effectual remedy is known. Of beasts attacked not more than about ten per cent recover; those in best condition are the chief sufferers; old and poor cattle occasionally survive an attack. Beasts that have once been attacked are said never to have the disease again. It is highly infectious. Calves drinking infected beasts' milk die. The stench from infected cattle is intolerable. The lowest castes of Hindoos (Holoyas and Madigas), and also wild hogs, eat the flesh of the dead cattle, without any ill effects; but tigers will not touch it, or even, it is said, kill beasts suffering from the disease. Infected herds are frequently driven into jungles where tigers are known to be, as it is superstitiously believed by the natives that if the tiger can be got to kill a beast the disease will leave the rest. It is probable that the disease is on the wane when the tiger recommences killing amongst them. The tiger doubtless discriminates between infected herds and those not infected by the stench of the former. This disease prevailed among the bison in the Billiga-rungun hills in 1867, and the Strolagas estimate that it killed two-thirds of them. I saw many of their remains when I first shot in the hills in 1869. Just as I was leaving India, in April 1877, it again broke out amongst them, and I have no doubt has decimated them. It was introduced, on the latter occasion, by the famine-stricken cattle driven to the jungles for pasture, when there was none elsewhere. *Kei-by-róga.*—In this disease the mouth of the infected animal becomes sore, frothy, and suppurates, and

thus renders grazing difficult. The beast is observed to limp and lick its feet, which are found to swarm with maggots—the hoof having suppurated and become loose. Frequently the hoofs drop off. It is generally severe for a month. It is much less fatal than *Dod-róga*; like that disease, it is most destructive amongst young animals in good condition. Perhaps twenty-five per cent of beasts attacked die. There is no known remedy, but a collar of pieces of wood is occasionally put on to prevent the beast licking its feet. Infected cattle are also kept standing in puddles as a preventive against maggots. I have shot bison suffering from this disease. *Cheppay-róga* is confined to beasts under three years of age, especially calves, and is invariably fatal. Beasts quite well one day will be found to have a shoulder or hind quarter swelled and puffy in the morning. The affected part feels spongy to the touch, and the beast limps. The stomach also swells. Death follows within six or eight hours. The flesh of the dead animal looks black and inflamed.—*Thirteen Years Among the Wild Beasts of India.*

GLANDERS IN THE FRENCH ARMY.—A severe epizoöty of Glanders has broken out in the Cuirassiers at Lyons. No less than £16,000 is stated to be the value of the horses died or killed. General Farre, commanding, has sent the regiment away to Valbonne.

THE ELEPHANT IN INDIA.—Mr. Sanderson, officer in charge of the elephant establishment in Mysore, says that in India the remains of an elephant that had died a natural death are scarcely ever met with. He has never seen such remains himself, and never met any one amongst the jungle tribes or professional elephant-hunters who had done so except at a time when murrain visited the forests. "Bones," he writes, "would not decay for some years, and teeth and tusks would survive for some time; yet not a single pair of ivories has ever, as far as I know, been found in the Mysore jungles during the time I have known them." He can give no explanation of this fact. How long the wild elephant lives is uncertain; but Mr. Sanderson thinks it attains to at least one hundred and fifty years.

SHEEP AS BEASTS OF BURDEN.—In the *Colonies and India* we find a note respecting the employment of sheep as beasts of burden. In Eastern Turkistan and Thibet, for instance, borax is borne on the backs of sheep over the mountains of Leh, Kangra, and Rampur on the Sutlej. Borax is found at Rudok, in Changthan, of such excellent quality that only 25 per cent. is lost in the process of refining. The Rudok borax is carried on sheep to Rampur, which travel at the rate of two miles a day, but, notwithstanding the superior quality and the demand for it in Europe, the expenses attending its transport seriously hamper the trade, which, but for the sheep, would hardly exist at all.

CATTLE PLAGUE IN RUSSIA.—According to information thus far received at the St. Petersburg Ministry of the Interior from the Governors of the various provinces of Russia, the loss occasioned by the Cattle Plague throughout the Empire is expected to exceed 30,000,000 roubles during the past year.

Correspondence, etc.

THE NEED FOR APPRENTICESHIP.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Being at present a student of veterinary medicine, maybe it is premature on my part to make any suggestions upon the movements of the profession: but I trust my love and zeal for its welfare will be accepted

as an excuse. In this month's issue of the VETERINARY JOURNAL, the transactions of the Eastern Counties Veterinary Medical Association are reported, and one of the conclusions arrived at was—"That no student should be admitted to any of our colleges unless he is able to produce a certificate showing that he had served an apprenticeship with a qualified veterinary surgeon for two or more years." This, I think, is a very sensible conclusion, as it would not only impart early practical knowledge, but would be the means of getting men into the profession whose natural abilities would be in accordance with their choice, as they would have good opportunity of judging, during their apprenticeship, whether such was the case or not. Some time since I met a friend who is a veterinary surgeon: on inquiring as to where he was practising, he informed me that he intended giving up the veterinary profession and entering the Royal College of Surgeons, as he found he very much disliked the employment which constitutes the every-day life of a veterinary surgeon. I need hardly add that he had seen no practice previous to entering the Royal Veterinary College; had such been the case, his money and time would not so needlessly have been spent.

I am, dear sir, yours very respectfully,

"NIL DESPERANDUM."

ADVICE WANTED.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Having a young friend who has graduated from St. Pancras, anxious to embark in practice, I should be extremely grateful if you would kindly give me your opinion on the enclosed advertisement, from this month's *Veterinarian*—

TO VETERINARY SURGEONS.

TO LET, with Immediate Possession, a SMALL INN, with STABLING (Valuation very low indeed). An excellent opening for a veterinary surgeon. Apply to W. A. TODD, Crown Brewery, York.

Do you think a member of the profession would find it advantageous to unite himself in this way, with a publican business and his profession? I am most anxious about my friend, who is a nice, gentlemanly young man, but unfortunately with small means.

I would not have troubled you, but "two opinions are better than one." So, having found the advertisement in your contemporary, I have their opinion, or it would not have been inserted therein, of course. Now I wish you to kindly advise me with your opinion, and at same time how shall my friend designate himself—"nondescript"? or in full—veterinary surgeon, licensed victualler, farrier, and blacksmith, horse breaker-and dealer, with more power to add, etc.? I remain, etc.,

"AN ADMIRER OF THE VETERINARY ART."

MORTALITY AMONG IN-LAMB EWES.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I see in this month's Journal that Professor Axe has been investigating for the Royal Agricultural Society, a disease which affects in-lamb ewes, and I notice in his report that he says Down sheep suffer most from the disease. This may be so, but we have lost a large number of the Lincolnshire breed.

The symptoms are the same as Professor Axe describes, and I have

made many *post-mortem* examinations, and in every case the ewes have two or three lambs.

The farmers who have given their ewes plenty of "trough" food whilst on turnips have never had better luck than this season, but those who have done the ewes badly have suffered severely.

The treatment I used to adopt was to have the ewes removed from turnips, giving plenty of good trough food, with tonic medicine.

The ewes have plenty of fat about them, and it was at the commencement of the lambing season that we had the greatest losses.

Should you think this will interest the readers of the Journal, I shall be pleased if it finds a place in the next issue.

I remain, dear sir,
Yours faithfully,
Lincoln, *April 9th*, 1879. W. STANLEY CARLESS.

THE FELLOWSHIP DEGREE.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Mr. Robert Ward, F.R.C.V.S., and others who have very recently advocated the possession of high educational attainments to be an essential for admission to the Fellowship degree, cannot surely know at what value the scholastic qualifications of the new Fellows (by examination) have been assessed by the officiating member of the College of Preceptors, or probably more would have been thought and less written upon the subject.

A sense of humility forbids that I should quote from the Preceptor's report; let it suffice that the statements therein contained are highly encouraging to those aspirants for the title of "Fellow" who may be diffident of their educational qualification, as they are the reverse of flattering to those whose *entrée* has been achieved by examination.

I am, sir, faithfully yours,
Liverpool, *April 5th*, 1879. RICHARD S. REYNOLDS.

To the Editor of the VETERINARY JOURNAL.

SIR,—In reading through the April number of your valuable journal, I notice a letter written by Mr. Ward, respecting the Fellowship Degree of the Royal College of Veterinary Surgeons. If your space is not too limited, will you allow me, as a veterinary student, to make a few remarks upon that important subject, and also upon the position of the veterinary profession. Mr. Ward says, "The degree should certainly be the means to mark its possessor as a fit associate for gentlemen." If none but those had the honour to possess it, few, I fear, would compete; for how many scientific and educated men enter our profession? Very few indeed—and why? Because its members are treated as blacksmiths—as illiterate, uneducated men. It will be an impossibility to raise the veterinary to an equal position with the medical profession, or introduce into it educated men, if we can have no protection. We cannot distinguish ourselves without some assistance; and assistance we must have, or the Fellowship, combined with every other degree, will be comparatively useless.

Mr. Ward is quite right when he says that the matriculation examination should be farther advanced in educational matters; but I think the majority of men, members of the profession, are quite equal to, if not better than the profession itself.

A man is a veterinary surgeon, a M.R.C.V.S.—what position does he occupy? Certainly not that of a gentleman. Will he ever be thought such?

I fear not: certainly he will not until a great deal of the quackery is abolished; for, allow me to say, that this is the stumbling-block over which we are continually falling, and it must be removed. This could easily be accomplished were we to unite, and fully resolve with a firm determination to eradicate the evil.

There is an old proverb which says, "Remove the cause and the disease will cease." This is certainly very applicable in this instance. You may possibly ask, what is the "cause"?—the answer is clear—quackery; as also to disease?—viz., illiterateness and ignorance. The former is applicable to unqualified practitioners assuming the title of veterinary surgeon, and farriers or shoeing-smiths treating the diseases of animals, and in so doing injuring the health, and very often placing the lives of valuable creatures in jeopardy. The two latter terms, which are almost synonymous, need no explanation; they are on a level or equal to, as Mr. Ward rightly says, "the dregs of the profession." We must therefore remove the quackery. Various methods have been adopted, but they have, comparatively speaking, failed, because there has been no unity of strength. We have been pulling in opposite directions, struggling against unseen barriers; but I hope soon all will be one mind, and once more assist in carrying into effect the old motto, "Unity is strength."

Mr. Ward, at the close of his able letter, wishes it to be fully understood that "none but Fellows are invited." Scarcely a united feeling, I think. Perhaps the business is to be strictly private; if not, why not allow all members and students to be present?—we all hope ultimately to become Fellows, whether scientific or illiterate ones: the former I hope, for I am sure it would greatly injure our feelings to know that we had taken any part in depreciating the value of that degree now held by such scientific gentlemen.

I remain, dear sir, yours faithfully,

A "STUDENT AT THE LONDON VETERINARY COLLEGE."

THE ENGLISH AND CAPE TROOP HORSE.

To the Editor of the VETERINARY JOURNAL.

SIR,—Much as the English bred horses are praised for their stamina and fleetness, there is no record, I believe, of an English horse having endured such a fatiguing journey as that related by Captain Alan Gardner, in a private letter, dated from Rorke's Drift, January 26th, 1879, and published in the daily papers of Saturday, March 22nd. After sending an alarm to the little band at Rorke's Drift, he started for Utrecht, a distance of eighty miles. After having ridden the same animal through a most dangerously rough country for many miles, and after being twenty-four hours in the saddle, he says: "I tried to get a fresh horse but could not, so rode on;" and he reached his destination. He then writes, "I was over thirty-six hours in the saddle on the same horse, who, beyond a few occasional mouthfuls of grass, had no rest or food. . . . . I calculated that I rode nearly 140 miles, including the morning's work. After a night's rest I set off with my guide . . . . across country, and reached this place the following day, on the same horse." Now such a feat of horsemanship and endurance should be chronicled; and I thought it ought to be so recorded in your Journal; and, moreover, the feat may be no very extraordinary one, as others may be reported. If such hardy animals cannot stand the ravages of the Cape sickness, we must not be surprised to hear that our English troop horses suffer badly, should the sickness open "an engagement." Yet it is to be hoped that with such efficient veterinary skill as the army possesses, measures of prevention will prove successful. However, doubtless a little of

the disease may be seen, so that our army colleagues may offer us and the Cape authorities valuable information of its true nature, treatment, and sanitary laws tending to prevention.

I am, yours very truly,
ROBERT WARD, F.R.C.V.S.

London, *March 24th*, 1879.

CONTAGIOUS PLEURO-PNEUMONIA IN THE UNITED STATES OF AMERICA.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—The slaughter of cattle at Liverpool shipped from America, per steamer "Ontario," has caused considerable excitement on both sides of the Atlantic, and has been the means of seriously interfering with the great trade in cattle recently developed between this continent and Great Britain. The cattle shipped per "Ontario" came from Indiana, Illinois, Michigan, and Ohio, with a few from this city—and I am confident they were perfectly free from *Pleuro-pneumonia Contagiosa*, and, in fact, they had never been nearer than four hundred miles to the place where Pleuro-pneumonia is reported to exist. It appears to me that the English authorities have been unnecessarily harsh in their restriction in regard to a trade which must ultimately benefit the people of Britain as well as Canadians and Americans.

I am, dear sir, yours truly,
ANDREW SMITH,
Toronto, *March 10th*. Principal of the Ontario Veterinary College.

[There can be no doubt whatever as to the existence of Contagious Pleuro-pneumonia in the United States, though to what extent it may prevail there does not appear to be any very reliable evidence to show, owing to the absence of trustworthy veterinary inspection in many of the States, and the extreme paucity of qualified veterinary surgeons. As will be seen from our "Notes and News" in the present issue of the Journal, the malady is present in at least several States of the Union, and this alone is sufficient justification for our government considering that country as infected, and acting accordingly. To have done otherwise would not only have been dangerous to our home stock, but would have been unfair to other scheduled and not more seriously infected countries. We have only to glance at the history of this terrible disease, and to note its diffusion from a small region in central Europe to every part of the world, to convince ourselves that, given a brisk cattle trade in America, it will soon invade those States yet free from it. As to whether the cattle brought by the "Ontario" were affected with the malady, that is altogether beside the question, for the reason above stated; but we can scarcely believe that the veterinary authorities here who reported as to its presence could be mistaken, considering their position and great experience, and the ample opportunity they had for satisfying themselves as to the facts.—ED. *V. J.*]

OBSTINATE SKIN DISEASE IN HORSES.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—In an article entitled "Obstinate Skin Disease in the Horse," in your February number, a common and troublesome affection is well described by Mr. Queripel; but there are one or two points on which I think I can offer some information of a useful nature. 1st. As to the breed of horse usually affected. In fifteen years residence in various parts of the Bengal Presidency, I have seen a very large number of cases of this disease affecting al

classes of horses used in the service—"Walers," Stud Breds, Country Breds, Arabs, Persians, "Capes," &c.—and, moreover, on turning to the records of the Remount Depot under my charge, I find that in the official year ending 31st March, 1878, the number of cases per cent. of strength of each class of animal was, "Walers" 2·86; Stud and Country Breds, 4·94. Ten or fifteen years ago, in batteries and regiments the majority of the horses were stud bred, and the disease was then as rife as now.

As to treatment, I have found the application of petroleum, mixed with oil, cure the most obstinate cases of even three or four years' standing. It must be applied carefully to every affected part; or better, perhaps, to the whole body, care only being taken in the latter case to increase the proportion of oil. The animal shows symptoms of annoyance when the application is first made; but the irritation soon passes off; and, moreover, the itching accompanying the disease passes off with it. So much so, that my usual practice has been to turn affected animals loose in a paddock after applying the dressing, although previous to the application they had to be kept tied by head and heel ropes to prevent abrasion of the skin by biting, rubbing, etc.

Depilation results, but the hair is speedily renewed, and the skin becomes soft and pliable.

Where the disease affects the mane and tail, the dressing may have to be repeated several times before the skin becomes soft and of its normal thickness; and until this happens the disease cannot be considered cured. It is also necessary frequently and carefully to examine the skin, and if any papulæ are found, to at once apply a small quantity of pure petroleum with the point of the finger, as these small enlargements mark the beginning of the disease, and are easily dispersed in this manner.

I have also tried acetic acid, kerosene or paraffin oil, and other applications, with fairly good results, but have not been so successful as with petroleum.

I have not been able to detect any animal parasite, even with the microscope, and incline to the opinion that a vegetable parasite is the cause; but I have never traced a clear case of transmission of the affection by contact.

Yours truly,

GEORGE A. OLIPHANT, F.R.C.V.S., Royal Artillery.

Hapur, N.W.P. India, *March 13th.*

"CONTAGIOUS PLEURO-PNEUMONIA AMONG AMERICAN CATTLE."

To the Editor of the VETERINARY JOURNAL.

SIR,—Without for a moment thinking of criticising the editorial in the March number of the Journal, some explanation relating to the subject may be worthy of perusal. I will, however, acknowledge that when I read the report of the landing of the cattle from the "Ontario," that the animals were found to be diseased, that I thought this resulted from the extreme exposure to cold when in transit from the West to the sea-board, and to contaminated air when on board ship. I am informed by persons who have been on board after the cattle have been confined but a few hours between decks, and before sailing, that the escaping air is extremely hot, and in one instance when at sea it was necessary to have the hatches closed ninety hours, only four of a lot of one hundred and sixty head were landed, the others being suffocated and thrown overboard. The statement that "it has been known for more than thirty years that the disease is positively the same as that we are so

painfully familiar with," etc., is not disputed by those who know anything in relation to it. A visit was made by the Massachusetts Board of Cattle Commissioners in 1862, to the famous Skillman Street Stables, in Brooklyn, New York. We found a large number of cows, some sick with the acute disease, and there were several stump tails, resulting from inoculation. A cow in the last stage of the disease was killed for our inspection, and the examination showed a typical case of the same malady which existed in Massachusetts. The owner of the distillery gave a history of the first outbreak there, which was as follows :—"A cow brought from England to furnish milk for the passengers of the ship "Washington," in 1848, was sold and taken to the distillery stable. She soon sickened and died, after which a large number contracted the disease, which had continued to the time of the above-mentioned visit."

The Commissioners in their report say : "If New York, New Jersey, and Pennsylvania would adopt similar measures to those in this State, it would be one of the most effective modes of securing the whole community against this disease, which, if allowed to prevail, would endanger the neat stock in the country, and greatly deteriorate the most substantial food of the people." The explanation alluded to in the commencement of this article is that little danger is to be apprehended from cattle reared in the Western States, from the fact that Pleuro-pneumonia does not exist there; and as the territory where the disease has a foothold is not adapted to the rearing and fattening of cattle, there is slight risk of those for export becoming contaminated. A strong point in evidence that the malady does not exist in the Western States, is the fact that there arrive at the Brighton and Watertown cattle-yards an average of three thousand Western cattle every week, a large number of which are slaughtered at the abattoir. The writer in his official capacity has often visited the cattle-yards, and has witnessed the removal of the lungs of the slaughtered animals at the abattoir, and not in one instance has a case of lung disease been found in a Western animal. There is also an inspector appointed by the Board of Health of the city of Boston, who daily inspects both the living and the slaughtered animals; and he informs me that it is exceedingly rare for him to find a diseased animal, excepting from external bruises received in transportation.

It is more than twelve years since a case of Pleuro-pneumonia has occurred in Massachusetts, yet the Commissioners have been upon the alert, fearing another outbreak, not from the districts alluded to, but from Canada. We had already suffered severe losses by the introduction of Epizootic Aphtha imported from England to Canada, and scattered broadcast to New York and to the New England States. True, there is a law compelling a quarantine of eight days on all cattle arriving at Canadian ports; eight days! worth as much as eight corn-stalk fiddle-sticks for an orchestra. Where the passage is only twelve or fourteen days, and the period of incubation is forty, there is sufficient time to infect the cattle for hundreds of miles around.

In conclusion, the new Order of the English Government will redound to the benefit of the cattle interests of this country. It will, or ought to, teach the States where the malady exists to stamp it out by united, vigorous action of these States; or, if the power was transferred to the national Government, in twelve months contagious Pleuro-pneumonia could be exterminated in this country.

I am, dear sir, yours truly,

E. F. THAYER, V.S.

West Newton, Mass., U.S.A.

"VETERINARY PROGRESS."

WHAT NEXT AND NEXT?

To the Editor of the VETERINARY JOURNAL.

SIR,—It would be a pleasing theme to review the course of events in our profession since the obtainment of our charter in 1844, so as to bring under notice the various panacea which have been prescribed for the benefit of our profession, and then sum up the measures which have been adopted and the results produced by them.

It is not my intention in the present paper to make an elaborate exposition of the many valuable suggestions made by estimable men from time to time, or revert to the objections ever offered by contentious, carping individuals, who seem to have an eye only to find fault with the efforts of others, but who are affected with singular barrenness of better suggestions to propose in their stead.

I shall content myself with simply alluding to a few of the many matters which have engaged the attention of the profession during the last decade. *1st.* The institution of the practical examination of the student in addition to the ordinary examination of the Court of Examiners for the diploma. *2nd.* The preliminary, or matriculatory examination of the youth when he enters college. *3rd.* The arranging of the examinations into three sections, enabling the student to concentrate his whole attention on separate subjects. *4th.* The extended curriculum of studies at the college to three years, or five terms. *5th.* The examiners of the Court of Examiners elected for a term of five years instead of for life, as hithertofore. *6th.* The institution of the fellowship degree. *7th.* The granting of a new charter enabling us to hold our annual meeting every third year in Edinburgh, instead of being confined to London, in accordance to provisions of previous charter. *8th.* The power given to the whole body of the profession to record their votes for members of Council by voting papers, instead of having to attend personally in Red Lion Square on the first Monday in May in each year for that purpose. *9th.* The agreement entered into between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society of Scotland, to discontinue the examinations of the latter, and the absorption into the body corporate of those gentlemen who hold only its certificate. *10th.* The supplemental charter now being obtained to enable us to carry this out, and thus realizing the grand idea—a consummation so devoutly to be wished—viz., "*A United Profession.*"

These ten subjects are a few of the measures which have been worked out by the Council of the Royal College of Veterinary Surgeons. Several of them were ripe for carrying when our present noble and worthy President came upon the scene, and which, by his influence and admirable business tact, have been carried irresistibly to a successful issue. I could expatiate upon the great good which must accrue from each of them separately, but I feel sure it must be self-evident to every member of my profession. Most of these measures I have earnestly advocated in my writings, my addresses, and my votes for the last twenty or thirty years. Although much has been done "*there is still more work to do.*" We are now a united body, we have no body of men antagonistic to us; we can now apply to Parliament for an Act, and in that Act we can ensure for ourselves all that we can reasonably desire.

What does the Profession require?—In the proposed Act of Parliament I suggest that we stipulate for four things. *1st.* The penal clause. *2nd.* The apprenticeship clause. *3rd.* The preliminary or matriculatory examination of the student to be placed in the hands of the Royal College of Veterinary Sur-

geons, instead of, as now, in the hands of each teaching school. *4th.* The Court of Examiners to be composed of veterinary surgeons only.

The Penal Clause.—This clause, it must be understood, cannot be obtained in a charter. A charter is a legal document granted by the Queen and her ministry, not by Parliament; the Queen has not the power by the constitution of England to inflict a fine—not even half-a-crown—on any one of her subjects. The clause in an Act of Parliament would give a magistrate the power to inflict a fine or imprisonment on any unqualified person adopting the name or title of Veterinary Surgeon; the fine would be fixed by the Act, probably at £5 or £10 for each offence; but it must not be misunderstood that such person is not in the least precluded from practising by this penal clause. He can call himself by some other title, and if he is a shrewd and clever man, can and will command more or less practice, and in some cases will continue, as he does now, to deprive the qualified man of more or less income, and in some cases beat him entirely out of the field: hence the absolute necessity of the qualified man being made a thoroughly practical man, as well as a scientific man.

The Apprenticeship Clause.—This clause I esteem of far greater importance than the one above. I know there are some who entertain other views on this subject; but having an extensive acquaintance with, and knowledge of the opinions of my professional brethren in every part of England, Ireland, and Scotland, I believe if the whole of the profession could be polled to-morrow, eight out of every ten would record their vote in favour of the apprenticeship clause. The veterinary surgeon, however well educated he may be, labours under an immense disadvantage throughout life if he has seen only the practice which comes under his observation at college; but if he has been accustomed to and inured to the work of attending sick and lame horses, etc., and is bound to produce an indenture of apprenticeship showing that he has served three years with a veterinary surgeon when he enters college, such a one (provided always that he possesses a good sound English education and a good intellectual capacity) is the most likely to bring credit upon himself and upon the profession to which he belongs. The late Professor Spooner has often said in my hearing, "We do not profess—nay, it is impossible for us to give a youth a sufficient practical instruction during his period of study at college."

Extract from the late Professor Spooner's speech, page 510, "Veterinarian," 1870:—"The question of the propriety of introducing an apprenticeship clause was brought before the Council shortly after the charter was obtained, but the corporate body had no authority whatever with reference to the education of the pupil prior to his entering either of the colleges, and there was great opposition offered to the insertion of such a clause in the bye-laws, and the proposal fell to the ground. At that time he was opposed to the introduction of the clause; not only did he think it was not expedient, but he also felt that the Council had no such authority. But subsequent reflection and experience had induced him to alter his views as regards the advisability of a youth being placed under the tuition of a practising veterinary surgeon prior to his presenting himself for his final examination for the diploma of the college; and he was the more convinced of the correctness of his present view from what had recently occurred in the Council, viz., the resolution to establish practical examinations. He had advocated such examinations for more than a quarter of a century, but he had seen so many difficulties in the way of carrying them out, not only with reference to pathology, but also with reference to anatomy, that he had hesitated to make any stir in the matter. The Council had, however, now decided that a practical examination should take place, and the pupil therefore must in future be practically educated. The question then arose, how was he to obtain that education? *It could not be*

imparted efficiently in the collegiate institution. No doubt, some who entered the schools without any previous instruction would, by diligently applying their minds to the study, become ornaments to the profession. He could relate several such instances, but still it was unquestionably better that a pupil should be competent to undergo a practical examination. At the Royal Veterinary College there were rarely less than seventy patients, and operations were being constantly performed; but how could manipulative instruction be given to 100 or 150 young men at once? *He therefore looked to the profession at large to assist the young men, and not to shirk the responsibility of taking them as pupils before they come to college.* It was the duty of the profession to afford every facility to those who wished to acquire a practical knowledge of the veterinary art, and to render the expense attending its acquisition as little as possible."

The Preliminary or Matriculatory Examination.—This, as it is now carried out, is considered exceedingly unsatisfactory and objectionable. There is no concerted action between the four teaching schools; each school appoints its own examiners, and settles the extent and the nature of the examination, subjects to be examined upon, &c. Now it shows, upon the very face of it, that the examinations will be unequal; this has been the case all the way through. Until lately the principal of one of the schools was his own examiner; and we all know it is against human nature that he would reject his own students and throw away his own living. I have been present at some of these examinations, and feel bound to admit that the examinations were conducted with perfect fairness and in a satisfactory manner. At the opening of the last session at Camden Town, a youth admitted, who had betaken himself to one of the schools in Scotland, was examined there, and passed his preliminary examination; he applied for his certificate, but was refused until he entered the college. He then presented himself at another school in the same city, was examined and passed; he applied for his certificate, got it, then he returned to London with this certificate and entered that school. This may be considered sharp practice, but it is just the kind of thing the system is open to. If the preliminary examination were in the hands of the R.C.V.S. the appointment of examiners would be such that the test would be equal at each of the four schools. Any sharp practice, such as that above referred to, would be provided against and be impossible. The advantages of this are self-evident.

The Court of Examiners to be composed of Veterinary Examiners only.—I am fully aware that there are some of my professional brethren who still hold that we cannot yet, if we ever shall be, in a position to, do without the assistance of extraneous help at the chemistry table; that there is not one man in the whole profession competent to fulfil the duty of examiner at that table. I say, I think this speaks very badly indeed of my professional brethren if it is so, but more especially of those who are our teachers. I have no hesitation whatever in saying that there are numbers of young men who have distinguished themselves in chemistry whilst at college, who could very soon so rub up their scientific chemistry as to be competent to undertake the duty, and quite equal to the teaching. Let us only remember that we have been in existence about one hundred years. Are we still too young to be entrusted to try to walk alone? are we still to be kept in swaddling clothes, in leading strings, for another century? I would here refer to n authority—a far greater authority than any authority now living in England —I allude to the late Professor Spooner. He said: "With regard to the Court of Examiners itself, it was said the time had not yet arrived when the college could dispense with the prop and pillar of support which it had availed itself of since its commencement; but surely men could now be found within the body of the profession who were competent to determine as to the qualifica-

tions of a candidate for the diploma of the college. He would be the very last man to advocate the removal from the Court of Examiners of any of these gentlemen who had so ably supported them at the physiological, chemical, and materia medica tables; but at the same time he would say, that so long as that pillar of support remained bound to the tree so long would it require its aid. Remove it and the winds might blow it, and it might yield to some extent, but its roots would become strengthened by virtue of its self-supporting power and then you could throw off the extraneous aid. *No more, then, would he admit members foreign to their body after this period* to the Court of Examiners. He thought the first members of the Court to be dispensed with were those who examined on physiology and anatomy. As to chemistry and materia medica, the probability was that it would be a longer period before the services of such gentlemen as were now examining upon those could be dispensed with.

During the period I was President of the R.C.V.S., I presided over thirteen examinations, of three hours each, in London and in Edinburgh. I made a practice of leaving the presidential chair and sitting at each table a quarter of an hour at a time. I listened attentively to every question asked and every answer given, and I feel bound to state that the questions asked were such that every student ought to be able to answer. I closely observed the nature of the different questions in chemistry, materia medica and physiology, and I candidly and freely admit here that I did not see that there were any matters of such profundity or abstruseness but what could be readily and fully grasped and understood by an intelligent and fairly educated veterinary surgeon who had kept up his reading upon scientific subjects. Besides, we know that at college there are some students who take a greater pleasure in studying chemistry and materia medica than others; these excel in that particular study, and when they know that by making themselves extra proficient in those subjects they may be called upon to fill the high and honourable post of examiner—an inducement that does not now exist—this laudable aspiration, inciting and impelling numbers of students, would of itself be a powerful lever in raising our profession to a still higher status. I attended also the examinations of the Highland and Agricultural Society's Board, and carefully listened to every question asked and answered at the different tables. So it will be perceived I have had opportunities of forming an opinion on this question above what the average veterinary surgeon has, and I do not hesitate in stating most emphatically that the Court of Examiners could, without any diminution of its efficiency, be in future composed of veterinary surgeons only, and that it would tend to exalt our position as members of a scientific profession.

I am, sir, yours obediently,

THOMAS GREAVES, F.R.C.V.S.

NOTICE TO CORRESPONDENTS, ETC.

SEVERAL Communications and reports of Societies are unavoidably held over until next month.

"ESTO QUOD VIDERIS."—Your remarks are too personal, and, if published, would only give occasion for an acrimonious and unprofitable correspondence.

E. D.—Your request shall be attended to, and in all probability granted.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from R. Ward, London; T. Greaves, Manchester; R. Poyser, the Carabineers, Umballa; R. J. Dawson, London; "An Admirer of the Veterinary Art"; F. F. Collins, Principal Veterinary Surgeon, Simla; "Nil Desperandum"; Professor McEachran, Montreal; W. Stanley Carless, Lincoln; N. Almond, Colchester; R. S. Reynolds, Liverpool; G. A. Oliphant, Royal Artillery, Hapur, India; Professor J. W. Wehenkel, Brussels; E. Dele, Antwerp; E. F. Thayer, Massachusetts; B. Eggleton, Bishop's Stortford; "Esto Quod Videris"; W. H. Coates, London; W. F. Barrett, Holbeach; J. Mills, Royal Artillery; "A Student."

BOOKS AND PAMPHLETS: *F. F. Collins*, A Glimpse at Horse-Breeding; *G. W. De*, Heeres-Verpflegung; Report of Minister of Agriculture for Dominion of Canada for 1878; *J. B. Russel, M.D.*, Report on Outbreak of Enteric Fever in Glasgow; Annual Report of the Veterinary Department of the Privy Council Office; *Dr. J. M. Wehenkel*, Etat Sanitaire des Animaux Domestiques.

JOURNALS: *American Veterinary Review; Annales de Méd. Vétérinaire; Archives Vétérinaire; Il Medico Veterinaria; Lancet; Nature; Revue Vétérinaire; Recueil de Méd. Vétérinaire; London Medical Record; Der Thierarzt; National Live Stock Journal; Journal de Med. Veterinaire et de Zootechnie; British Medical Journal; Archiv für Wissenschaftliche Veterinärkunde; Live Stock Journal; Journal of the National Agricultural Society of Victoria; United Service Gazette; Wochenschrift für Viehzucht und Thierheilkunde; Agricultural Gazette; Mark Lane Express; Farmer; North British Agriculturist; Journal of the Royal Agricultural Society; Index Medicus; Medical Press and Circular; L'Echo Vétérinaire.*

NEWSPAPERS: *Scotsman* (2 copies); *Asian Sporting Paper; Montreal Herald* (2 copies); *Longford Independent; New York Tribune; Lahore Civil and Military Gazette; Montreal Gazette; Edinburgh Courant; Cambrian News.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, VETERINARY JOURNAL, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

JUNE, 1879.

SCROFULA AND TUBERCULOSIS IN CATTLE.

(*Continued from page* 237.)

BY G. GRAY, M.R.C.V.S., BAKEWELL, DERBYSHIRE.

WHETHER the milk of animals suffering from the disease really contains the virus of tubercle has not as yet been well authenticated. However, with the knowledge we possess, it must be looked upon with the gravest suspicion. Quite recently I had an opportunity of examining two calves which were suckled by a cow while suffering from acute Tuberculosis. I saw the cow a few days before she died, when the calves had just been weaned. She was three years old, cross-bred, in the first period of lactation, and was extremely emaciated—Diarrhœa having set in, which soon terminated life. The calves up to this time have exhibited no signs of disease; they are in good condition, but look small for their age.

Animals with a hereditary taint have very frequently peculiarities in their physical conformation whereby they can be readily distinguished from those of a sound constitution. With such animals, when moderately well attended to when young, the bony framework of the body, and especially the long bones, will grow fast; the animal will be big, or rather stand high for its age. The limbs are long, knees and hocks inclining inwards, the body long, with flat ribs and narrow chest, a long narrow face, with very often a slight prominence of the nasal bones. These are mostly met with among cross-bred stock, and are very common

on dairy farms, where little attention is paid to physical conformation. Pure bred stock suffer less in their conformation; but successive generations from the same breed tainted with the disease will ultimately become affected, they often falling off in physical development. A cold atmosphere is a very common cause of Tuberculosis. I have had ample opportunity of substantiating this fact in Derbyshire, and it certainly accounts for the disease being so prevalent in this neighbourhood. On the high-lying land of this county, which is much exposed and poor in shelter, cattle suffer much from the ravages of the malady, and more so in damp than dry seasons; so that the addition of moisture in the atmosphere greatly aggravates the cause. When the atmosphere is cold, and much charged with moisture, I have observed many cases occurring of tubercular inflammation of the lungs, pleura and peritonum. I have also noticed that when dry, cold, easterly winds prevail, Tubercular Bronchitis, often accompanied with Laryngitis, will ensue. Soils situated upon the shale exert a peculiar influence in the production of this malady; the herbage, and even the water, producing Chronic Dyspepsia, which induces the cachexia so conducive to the formation of tubercle. The water at one time was looked upon as the sole cause, and for this reason was cut off, and surface water substituted. This has greatly diminished the influence of, but not altogether extirpated the cause; for in wet seasons it will be found to operate strongly, showing that the herbage has much to do with the production of this phenomenon. The hay will have a similar effect upon cattle in winter, when they are tied up, as it constitutes their sole *pabulum.*

As I have already stated, Scrofula may make its appearance at any period of life; but most frequently it is met with about the period the body has accomplished its growth—from two to four years of age. The first period of pregnancy, of parturition and of lactation (which generally occurs when the animal is from two to four years old), are the most trying periods for an animal predisposed; and the first signs and progress of the disease can often be chronicled from either of these periods.

Crowded, badly drained and ventilated stables, in town and even country dairies, have very great influence in the production

of Phthisis—the buildings being frequently inadequate for the number of cows kept, and sanitary measures are often sadly neglected. In addition to these, the food that dairy cows generally receive is not always calculated to maintain the equilibrium of health. Insufficient food and shelter often produce this malady at an early age. It is customary with many farmers to keep their young stock out in winter, giving them little beyond the scanty herbage they gather; and many of them have not even a shed to shelter in from inclement weather. Such a practice, in this county at least, is objectionable, and calculated to sap the constitutions of growing animals; well-marked symptoms of Scrofula often appearing before they are many months old, and when selected for dairy purposes they will succumb to the disease at an early date. Cows and bulls are more subject to the disease than emasculated animals; many of the former succumb to the disease, or are far advanced in it, before they reach the age of three years, while the latter rarely exhibit any symptoms during life, as they are generally slaughtered at three, and often at two years old. Isolated deposits of tubercle are sometimes found in the lungs and liver, but the virus does not appear to act so energetically in them as in the cow and bull.

Certain breeds are more predisposed to the disease than others, and none more so than the pure and cross shorthorn, while few appear to resist the influences which lead to the production of the malady like the Scotch kyloe. Although large numbers of these are kept in this neighbourhood, I have never encountered a case of Scrofula among them.

There is little doubt that much depends upon the external influences and surroundings in inducing the disease—a cold, damp atmosphere, with innutritious food, playing a very important part in its production.

Symptoms.—The symptoms and progress of the disease will much depend upon the organs involved. The proneness to the formation of tubercle is not uniformly the same at all periods of life, nor in all parts of the body. In young animals the disease is more acute, and the parts oftenest attacked are the cervical, bronchial, and mesenteric glands, peritoneum, pleura and lungs;

while in old animals the disease is mostly chronic, and often confined to the lungs and liver. The premonitory symptoms are often not well marked, and in some cases they are entirely absent, especially in the chronic form of the disease, which mostly occurs in aged animals. I have witnessed, on several occasions, deposits in the lungs of animals (that have been slaughtered or have died from other maladies), that never at any time of life exhibited the slightest indications of the presence of the disease, but were always healthy and in good condition. There are, however, in general, well-marked premonitory symptoms which usher in the cachexia that precedes and accompanies the formation of tubercle. Malnutrition, of more or less intensity, exists for an indefinite period prior to the detection of local lesions; this is manifested by an altered and impaired condition of the secretions of the body. The hair loses its bloom and lustre, and if in winter, falls off from the persistent attack of parasites, the presence of which often indicates a vitiated condition of the body. The skin becomes dry, scaly, and dirty, and assumes a yellowish hue. If in milk, the secretion may continue undiminished for a time, but will be found to be impaired in quality, becoming thin and watery, of a bluish tint, with a deficiency of the nitrogenous constituents. There may be no tendency to a loss of condition for a time, and although the quantity, and also the quality of the food are increased, the results are negative, as whatever may be devoured by the victim does not improve the condition. The appetite may remain unimpaired for a time, and any kind of food will be readily partaken of; though in some instances it is morbidly increased. This, however, is rarely the case with young animals. When the disease occurs in young animals, the growth is generally retarded, and in some cases entirely arrested. A case in point came under my notice some time ago, which I think is worthy of note. The subject of this case was a pedigree shorthorn bull calf, bred from high blood. His sire was a remarkably fine animal, and cost the owner a large sum of money when but a calf, as he was also of high blood. He suffered from an acute attack of Tubercular Bronchitis when two years old, which terminated in Tubercular Phthisis—the "dry" or "calcareous" form of the disease, as Mr. Fleming has termed it in his admirable

"Manual of Veterinary Sanitary Science and Police." I attended him throughout his illness, but he was subsequently cast for stud purposes, in consequence, and disposed of to the butchur. The dam was equally well bred, and likewise suffered from the same form of the disease. She had to be disposed of in a similar manner, and this was the last calf she bore. The colour of the sire and dam was roan, the calf white. My attention was first called to him when about twelve months old. Knowing well his ancestral history, I inquired as to the state of his health prior to my visit, and this was reported to be good up to about ten months old, when he had grown and thriven well; but latterly he had begun to fall off, and looked unhealthy in his coat, though the appetite was good and he was in high condition. The symptoms present were a dry, harsh coat, skin dirty, scabby, and yellow—the latter appeared conspicuously so, owing to his colour—bowels constipated with tympanitis. No organic disease could be detected, but his general aspect certainly betrayed "Scrofula incipience." As he was suffering from indigestion, with torpidity of the liver, I prescribed accordingly, which afforded relief. During the remainder of his life he was much troubled with indigestion, and latterly the appetite became capricious. He retained his condition, which was good to begin with, as he had always been well kept, but the growth of the body was completely arrested—he did not grow after his first attack, when he was ten months old. I saw him frequently and prescribed occasionally for indigestion, which he suffered much from, but not acutely. Although no appreciable thoracic complications were present, it was evident that Scrofula was seriously involving the abdominal organs. Inappetence, dyspepsia, malnutrition, and lassitude were daily increasing. It was now apparent he would do no good, so he was disposed of to the butcher when twenty-one months old, and for size he would have passed for ten months old. The butcher thought he had bought a calf, but was afterwards surprised to find he had shed his central incisor teeth. I learned that the abdominal organs were "graped" and grown together, but the lungs and heart were healthy. I was disappointed I had not an opportunity of making a *post-mortem* examination.

(To be continued.)

HEMIPLEGIA IN A YEARLING FILLY.

BY T. H. MERRICK, M.R.C.V.S., KETTERING.

EARLY on the morning of March 31st last, I was hurriedly summoned to attend at Weekley, to see a yearling cart filly, the property of Mr. C. Bayes, which he was afraid would be dead before I could get there. On arrival I found the animal lying in a straw yard, all four limbs fully extended, head somewhat drawn to the right side, left ear drooping, both eyes perfectly blind, and the *cartilago nictitans* protruding, similar to what is seen in a case of Tetanus. The history of the case I found to be as follows:—The filly was lying out with three others, and came into the yard to have some hay, apparently in perfect health. While feeding, however, the man who attended to her told me that she fell down, to all appearance as if in a fit. I had her removed into a hovel close to, and after giving a mild aperient, ordered her head to be constantly bathed with cold water, which seemed to much relieve and tranquillize her. The pulse was of moderate strength, about 60 to the minute, the mucous membranes were slightly injected, and the extremities were warm. She would endeavour to eat some hay if offered to her, but appeared to have lost the use of the left side of her mouth, which was slightly drawn.

April 1st.—The filly still lay in the same position, but occasionally struggled violently to rise; pulse 84, mucous membranes much injected. Her bowels had responded to the aperient administered. Applied a strong blister to the poll. Saw her again later in the day, and found that after much struggling she had managed to get up, but she was very infirm, with her head drawn very much to the right side, still perfectly blind, and the left ear quite pendulous. She could eat hay slowly and drank freely; pulse 72. Being very awkward to do anything with, and not wishing to upset her, I simply gave her three times a day, Tr. Aconit. gtt., 7, and Pulv. Pot. Chlor. oz. 2. mixed in her drinking water, and ordered her sloppy diet.

April 2nd.—The filly was certainly improved, not being so infirm, and the pulse had fallen to 60; the mucous membranes were of a better colour.

April 3rd.—The sight of right eye has returned; pulse still about 60; continued same treatment.

April 5th.—The filly could now see perfectly well, although the head was still drawn to the right side and the left ear drooped. Her pulse having fallen to 48, I ordered her a tonic powder, with Strychnia, grs. 2., twice daily.

April 21st.—Saw the filly for the first time since the 5th inst. The owner had turned her out with her former companions, and she appeared to be perfectly free of any evil results from the attack.

I thought the foregoing remarks might interest some of the readers of the VETERINARY JOURNAL, more particularly as I notice that Professor Williams, in his work on "Veterinary Medicine," says that Hemiplegia is not only very rare amongst the lower animals, but that it generally proves fatal.

GLANDERS IN INDIA.

BY J. MILLS, M.R.C.V.S., ROYAL HORSE ARTILLERY.

SEVERAL articles having appeared in the VETERINARY JOURNAL relative to Glanders in India, and feeling deeply interested in the subject, I desire to bring to notice the particulars of an outbreak which took place amongst the horses of the battery under my charge at Meean Meer.

We marched out from Umballa on the 7th October, 1878 (the horses were then apparently all in a healthy condition), arriving at Meean Meer on the 26th of the same month. On the 4th November, just nine days after our arrival, acute Glanders made its appearance.

My first endeavour, naturally, was to find out the cause. I was confident that it was not of spontaneous origin, as the surroundings did not indicate anything of the kind; on the contrary, the horses were in good condition before starting, and during the whole march their condition was maintained, the forage (grain, bran and grass) being of good quality, with the exception of the grass, which on a few occasions was rank and dry; but, on the whole, a fair supply of it was obtainable. At

each camp there was an ample supply of good well water, though in some instances it was "brackish."

The horses were watered from troughs used by all animals passing. They were well groomed and clothed; in fact, the stable management was everything that could be desired; therefore I could not trace it to a want of care in that direction.

The morning being cool, the marches were performed without much exertion, the average distance of each march only being about twelve miles.

Knowing before starting from Umballa that Glanders was prevalent in the Sarahimpoor district, and although we were not to march through that district, still I determined on exercising every precaution, as the disease was just as likely to be in existence on the roads throughout Sirhind and the Punjab as anywhere else: which unfortunately was the case, as we shall afterwards see.

Before the battery reached any of the camps, I rode on and inspected all the animals in the "Serai" and "Bayaar." The water-trough was carefully cleaned out before the horses were allowed to drink. I inspected all droves of horses or ponies that I could see on the road, but detected nothing until we came to a place called Bara, about half way between Umballa and Meean Meer, where I saw a pony belonging to a dealer which slightly aroused my suspicions, and from that day I kept a close watch on the horses of the battery.

On the 1st Nov., I noticed a chestnut mare looking dull, feverish, and not feeding. She was admitted to the hospital, where she was carefully looked after, and every sanitary precaution taken. On the morning of the 3rd there was slight enlargement of the submaxillary glands. The Schneiderian membrane, more especially on the left side, appeared inflamed in patches, and, as I thought, becoming ulcerated in one spot just inside the wing of the nostril—but it was a most difficult matter to get near her head to make a minute examination, as she was of a most nervous temperament; therefore I decided to wait another day before giving a definite opinion. Next day (the 4th), after some trouble, I got a glimpse of the membrane, on which was situated a well-marked chancrous ulcer, so distinctive

of that loathsome malady; also a slight discharge from the nose, and the submaxillary glands were perceptibly larger than on the previous day. I could see the inguinal glands were enlarged, with stiffness in her gait behind.

The matter was at once reported, a committee formed, and the mare destroyed forthwith. *Post-mortem* examination fifteen minutes after death revealed: Fairly well nourished body. On opening the nasal chambers the mucous membrane showed signs of intense inflammation having existed, with a row of very small but well-defined ulcers on the surface, and on the inside of the wing there was one about the size of a threepenny piece. On cutting into the submaxillary glands, I found they contained a small quantity of sanious matter. All the internal organs, both of the thorax and abdomen, were highly inflamed.

The surface of the lungs and liver presented several nodular bodies in a state of formation. The lymphatic system throughout the whole body was in a state of acute inflammation, and here and there enlarged ducts and glands were to be seen.

I have given the case of the chestnut mare as a typical one, and as all the others presented much the same appearance, it would therefore be useless for me to give them in detail.

On the 5th November the disease made its appearance amongst the "grass-cutters'" ponies, and in a few days several of them had to be destroyed.

The precautionary measures which were adopted both with the horses of the battery and the grass-cutters' ponies, after the appearance of the first case, were as follows:—The suspected animal was at once isolated, and the others which stood next it were also isolated, both from the animal suspected and the other horses of the battery, their litter burnt, and all the stable gear thoroughly disinfected. The native groom (Sāees) was isolated as well, and received strict orders that he was not to leave his post day or night until the termination of the case was apparent. The carcases of the animals destroyed were deposited in a grave ten feet deep, the skin cut up, and a large quantity of quick lime thrown in with them—in fact every conceivable sanitary measure was put into force to prevent the spread of the disease.

When I left Meean Meer on the 6th December for England,

just about a month from the first outbreak, something like 2¼ per cent. on the total number of horses in the battery had been destroyed.

Amongst the grass-cutters' ponies the per-centage of outbreak was about five, or a little over double that of the horses; but this only goes to prove that from the poor condition they generally are in, they become good receptacles for the poison of Glanders or any other disease.

I have not brought this outbreak to the notice of the readers of the VETERINARY JOURNAL with a view of giving a communication on the malady, as no doubt it is familiar to most of us; but simply to show that the disease is, from what we have seen, just as likely to become a common one in India as it is at home, and points out the necessity there is for proper sanitary surveillance with regard to contagious diseases amongst animals. There is only one thing to be done to prevent its spread—and, if not actually stamping it out, to, at least, keep it in abeyance—and that is the placing of each district under strict veterinary supervision, with the assistance of the police.

But in such a country as India the enforcement of any sanitary law is attended with the utmost difficulty, principally from the dread with which the natives look on doing anything out of their usual customs of life, and they will do all in their power to thwart you in your endeavours to carry it out.

As an instance of this:—While the disease was in existence at Meean Meer, and after a few of the ponies had been shot, another one, with the grass-cutter, was isolated, and he received strict orders not to leave the spot; but, alas! next day he and his pony were *non est*, he had fled in the night no one knew where; and when I left some days afterwards he had not been heard of. Of course, there was no actual guarantee that the animal was really glandered, and I sincerely hope it was not; but at the same time the appearance it presented warranted its separation. Well, again, on the other hand, supposing it turned out to be suffering from the disease, the consequences are simply deplorable—in fact, a better means of spreading it throughout the country could not be conceived than this wretch wandering wherever he pleased, contaminating everything he came across.

The same is equally applicable to the dealer who passed us at Baro—in fact, his case was a worse one than the grass-cutter, as his life is essentially a moving one, and so long as such causes as these are in existence the effect must be disastrous.

ON THE DETENTION IN THE UTERUS OF THE ŒSTRAL PRODUCTS IN THE LOWER ANIMALS.

BY A. E. MACGILLIVRAY, V.S., BANFF, N.B.

THIS is a matter of more importance to the veterinary profession and their clients, than may at first seem apparent; and as Mr. George Gray, of Bakewell, in last VETERINARY JOURNAL, has been pleased to open up the subject, and has propounded certain queries as to the same, I intend making a few practical observations on this interesting topic.

Mr. Gray's queries are:—(1) Does the catamenia, when retained, owing to impervious os or other causes, remain in the uterus unaltered, or does it undergo any change? (2) Does the continued presence of the catamenia in the uterus excite the mucous membrane to increased activity?

The answer to the second query will depend on how the first is disposed of; for it cannot be denied that, if the retained œstral products (*catamenia*, so called) remain unaltered and undergo no change of any sort, the mucous membrane of the organ where it is both secreted and imprisoned cannot be expected to become unusually excited. But, on the other hand, if the imprisoned œstral products undergo any change, either physically or chemically, through becoming disorganised or disintegrated—as all natural emissions or secretions very quickly become if retained within, and not functionally monopolised by, the active animal economy—then the mucous membrane of the uterus would undoubtedly become excited to an undue, and perhaps diseased activity.

In Mr. Gray's case, I should say that the imprisoned excreta (catamenia or œstral product) had evidently begun to undergo a change, and hence the increased vascularity and epithelial denudation in the mucous coat of the cornua uteri. It is a pity Mr.

Gray did not say whether or not the imprisoned fluid had any bad smell.

No doubt the existence of sanguineous catamenia in the lower animals is still a *questio vexata* in professional circles, and a matter of no small amount of discussion and debate; and it must be allowed that a case such as Mr. Gray's does not do much towards proving this catamenial analogy in all animals—human and brute. Here there was found a "yellowish-looking fluid," which resembled "yeast mixed with beer;" no signs of anything like blood; and it is very likely that to this absence of the sanguineous element we owe the absence of smell, the healthy state of the mucous coat, and the light colour.

It may well be asked, however, whether this "yellowish-looking fluid" is at all compatible with the idea of its being retained catamenia? A query which can at once be answered in the affirmative, and that for the following reasons:—

In Mr. Gray's case the heifer was only twenty months old, and had very likely but seldom been in heat (menstruated?)—certainly not so often as he says. Now, in the young human female (in which, in adult life, sanguine catameniæ are unquestionably the rule), *very often* at the beginning of menstruation, and for several succeeding menstruations, the catamenia consists of a "serous fluid slightly red," and sometimes without even the "slightly red"; and it is only after the lapse of several "periods" that the real sanguineous catamenia appears. Hence it may safely be argued that the absence of a "slightly red" tinge in the imprisoned fluid in this *young heifer*, is no tenable reason to lead us to suppose that it was not real œstral products (catamenia?), with perhaps a slight additional abnormally secreted fluid from the partially diseased uterus.

I am not at all inclined to allow that Scrofula had anything to do with the production of the fluid in this case; the fluid was there simply because its means of exit was shut up—in fact, had never been open; for it seems to have been a case of congenitally occluded os uteri. Besides, I can neither see the meaning nor admit the truth of Mr. Gray's statement, that "scrofulous matter may be formed without any accompanying lesion." But as this is foreign to our subject, I shall leave it to

Mr. Gray to explain what part of the animal economy may become the seat of a scrofulous deposit without any accompanying lesion.

In a very recently published work (January, 1879), embracing the entire range of obstetrical learning, I find it stated that the true source of the catamenia is now believed to be the cavity of the body of the uterus, which becomes congested, its vessels gorged with blood, and its mucous membrane swollen and sometimes partly shed. This excited, congested, and swollen state of the uterus owes its origin to previously existing *ovular maturation;* one or more ovules ripen every month, these excite ovarian congestion, and subsequently, from sympathy, the Fallopian tubes and uterus become congested. In fact, to quote this latest authority, "it is thoroughly recognised now that the ovaries are indispensable to, and the mainspring of, the menstrual flow." This has been verified by actual observation in the human female.

As to the lower animals, at pp. 56, 57, 58, of that remarkably comprehensive work, Fleming's "Veterinary Obstetrics," the reader will find a description of phenomena quite analogous to the above. And I am happy to be able to quote a case confirming Mr. Fleming's statements, as to the condition of the uterus in cows during œstrum. On the 16th March, 1877, I was consulted in reference to a valuable shorthorn cow with a bad cough. On examination I found her far gone in Pulmonary Tuberculosis; and, as she was in fair condition, I advised her slaughter. The owner demurred, and said he would like another calf out of her; the cattleman then remarked that she was *just in heat*, and would be ready for service next day. Owing to my representations, however, she was slaughtered next day, and I was only too glad to attend and make an examination of the uterus. I found ovaries and uterus congested—the mucous membrane of the latter being loose and easily scraped off—with congestion beneath; and about, or over, two ounces of a transparent blood-tinged fluid. This fluid was quite clear and purplish-looking, rather than red, but on exposure it became redder. I tried to get a phial to preserve part of it, but failed. The os uteri was closely shut, so that it would have been another

day before the fluid made its exit, by which time it would likely have been more abundant and deeper in colour.

Returning, however, to the question of change or no change in imprisoned catamenia, I am inclined to assert, from experience, that a change generally does occur, more especially if blood be present, and the greater the amount of the latter the more speedy and deleterious will the change and its effects prove; for blood once withdrawn from the circulation, if retained in any organ or cavity, very quickly becomes disintegrated and putrid, and so gives rise to much irritation, which irritation is followed by increased secretion of the irritated surface; and hence the *immense* quantities of abominally smelling sero-sanguineous collections often found in these isolated *uteri!*

In an article written by me, which appeared in the *Veterinarian* for November, 1872, I mentioned this retention of the œstral products as one of the causes of Uterine Leucorrhœa. Now, Uterine Leucorrhœa is merely an abnormal secretion from the diseased mucous membrane of the uterus; which diseased state is brought about (in instances such as those under discussion) by the irritative and acrid action of the *changed* œstral products. In the young human female who has never menstruated, this Leucorrhœa is *often* the precursor of true catamenia; and this, without doubt, from like reasons as in our patients—the lower animals—namely, owing to some obstruction or occlusion about the os uteri or vagina or hymen, the catamenia are retained, and by irritation produce a diseased secretion of a profuse description from the mucous membrane, which, if it does not of itself burst through the obstruction or occlusion, must be evacuated by medical aid. A great many very untoward cases of this sort occur in medical practice.

On the 9th May, 1878, I was asked to attend a young pure shorthorn heifer in calving. On my arrival, I found that an empiric had preceded me. He had examined the heifer and said her "passage" was not properly expanded, but expected the same to be relaxed in four or five hours, at which time he would return and extract the calf, *which he could easily feel!* The quey had pretty severe pains; so I at once proceeded to examine her, and found the passage, from the *ostium vaginæ* inward, quite im-

pervious. This startled me a good deal; after considering for a little, however, I explored *per rectum*, and found the uterus well distended, but could discover *no calf!* I then resolved to open up the vagina as gently as possible; this I shortly accomplished. The os uteri was quite distended, the occlusion not extending so far inward. About a gallon of a thick purple-coloured fluid, almost odourless, escaped! The owner now volunteered the information that he was not certain whether the heifer was served with the bull or not; very likely not, I should say. I had the uterus several times syringed out with tepid water and carbolic acid, and the quey became all right.

In this case the vaginal adhesions were not very firm; so that I was not inclined to suppose that the occlusion was congenital. The absence of any disagreeable smell also led me to form a favourable prognosis; and I was right, for the quey continued healthy, and had her usual "periods."

In the VETERINARY JOURNAL for March, 1877, I quoted an analogous case in a two-year-old filly; this filly also came all right in the end, had her regular "periods," and is this season in foal!

I cannot conclude this communication without again adverting to the importance of this subject, alike to the profession and their clients. Referring only to the last two cases, we may see the value of a thorough knowledge of its nature. Here, it will be observed, two valuable animals were saved and rendered fit to "propagate their species," after both had suffered from "Detention of the œstral products (catamenia) in Utero," and that to such an extent as, if left alone, they would undoubtedly have succumbed like many more.

A case in point strikes me. In August last, a friend of mine consulted me in reference to a favourite pure polled-heifer, which, from the description given me, I had no doubt was suffering from the effects of retained catamenia. My advice was to get the attending V.S. to open up the passage and allow the imprisoned fluid to escape, and follow this up with tepid water and carbolic acid repeatedly injected into the uterus. If this was not considered practicable, as the heifer was prime fat, I advised her to be slaughtered. She was allowed to die!

INDIAN VETERINARY NOTES.

BY CAPTAIN M. HORACE HAYES, "THE BUFFS," MEERUT.
AUTHOR OF "VETERINARY NOTES FOR HORSE OWNERS," ETC.

I BEG to submit to the readers of the VETERINARY JOURNAL the following notes, in the hope that they may prove of some interest:—

No. 1.—*On "Split Pastern."*

Last year, at the Cachar races, a pony pulled up dead lame on the near fore-leg after winning a race. The animal was taken to my stable, which was within a hundred and fifty yards of the winning-post, and as there was no veterinary surgeon in the district, I was asked to treat him. I found the foot flexed, the toe only resting on the ground. Great tenderness was evinced on pressure being applied to the fetlock and pastern, but I could detect no lesion of the structures. I gave a dose of physic, had warm fomentations applied, and slings not being available, I bedded down—following Professor Williams' advice—with an ample supply of sawdust.

Next morning the limb, from the knee downwards, was much swollen. I observed that the swelling about the pastern was tense and uniform, giving it a rounded appearance; so that, on manipulation, I could not trace any inequalities on the posterior surface of the *os suffraginis;* hence I concluded that there was a vertical fracture of that bone. With rest and cooling treatment, the pony in twelve weeks' time was able to walk comparatively sound. By that time all the swelling above the fetlock had disappeared, though the pastern still presented an abnormally rounded appearance, and was considerably thicker than its fellow. At this period the pony was seized with an attack of Anthrax and died. On dissecting out the pastern bones, I found that my diagnosis was correct. The fracture occurred directly through the groove that lies between the two glenoid cavities on the superior extremity of the *os suffraginis*, and proceeding vertically downwards, passed through the external condyle of the inferior extremity. There was hardly any displacement. A large

amount of provisional callus was thrown out, though it did not in any way interfere with the articulation.

No. 2.—*On "Split Heels."*

I use the above term, in default of a better, to signify division of the hoof, commencing on the sole between the heels and the frog, and terminating on the posterior aspect of the coronary band, as a result of concussion caused by galloping on hard ground.

I have never seen a description of this accident in any veterinary work, nor have I met with a case of it until within the last year.

Last October, during the Dehra Doon race-meeting, Mr. Ryder, who trains for Lord William Beresford, showed me the Australian race-horse Newcastle, with a hoof in this condition. The animal was very lame and sore, and had pulled up after work, bleeding from the fissure. I advised rest, the use of a bar shoe, and that the posterior portion of the coronet should be slightly blistered from time to time. He, however, continued to work the horse at intervals, with the result of failing to get him sufficiently well to run in any of his engagements.

A mare of mine, named Vesper, after winning a steeplechase at Allahabad, last November, was found to be very lame from a fissure of the hoof at the posterior aspect of the coronet, extending down to the sole of the off fore-foot, between the frog and external heel. There was slight hæmorrhage from the crack. Under the advice of Mr. E. Elphick, V.S., 3rd Madras Light Cavalry, I poulticed the foot for a couple of days, and then freely opened out the fissure with a searcher, lowered the heels, applied a heart-shaped bar shoe (of a pattern I have long used), and blistered the coronet above the wound, with the happy result of being able to put the mare into work again after an interval of three weeks' rest. Since then she has won two other chases and has continued quite sound. I would lay stress on the necessity of opening out the crack somewhat freely, so as to protect the sensitive parts from being bruised by the divided surfaces coming into apposition when the animal places his foot on the

ground. I also took care to keep the hoof dry, so that its fibres might not be rendered weak and spongy by the absorption of moisture.

This accident is not very uncommon in India.

No. 3.—*On "Bar Shoes."*

In the foregoing note I have alluded to a bar shoe of a heart-shaped form, to be applied as depicted in the accompanying figure.*

Some years ago I had a horse in training whose feet were very weak, and prone to throw out sand-cracks. As I had to keep him in work for his engagements, the idea of thus modifying the ordinary bar shoe occurred to me, as his feet were too unsound to bear the concussion of galloping in ordinary shoes. I do not know whether this plan has ever been recommended before, but it is so useful that I take this opportunity of most strongly advocating its employment with horses that require a bar shoe, and have, if possible, to be worked at a fast pace.

Its most patent advantage is that it is entirely free from the great objection to the ordinary bar shoe—liability to be wrenched off by the shoe of the corresponding hind foot catching on it. I have run horses in at least a dozen races on the flat and across country with this shoe, not counting the work done in training, and have never known of a case of its being interfered with by the hind shoe, by stones, heavy ground, or by any other displacing agency. Its less obvious advantage is that it throws weight on that portion of the frog which is best suited to bear pressure.

No. 4.—*On "Osteo-porosis."*

More than a year ago, when stationed in Cachar (Eastern Bengal), I was shown a six-year old Munipuri pony mare which made a tremendous noise when galloped, or even cantered. On examining the animal, I found the nasal bones abnormally large, the

* The figure shows a bar-shoe, with the bar carried forward to the body of the frog, instead of passing directly across and resting on its branches. —ED. *V. J.*

nasal cavities considerably contorted, and the external aspect of the nose unnaturally broad and flat, so that the face had a strange square appearance. The pony was in capital health and condition. From the history of the case I learned that about two years previously she became ill and out of sorts, but on being well fed and looked after she recovered, but was found to have acquired the habit of "making a noise." Never having seen a similar case, I was quite unable to explain the nature of the present one, except that the roaring was obviously caused by the contorted condition of the nasal cavities. Shortly afterwards another pony mare was brought to me suffering from Osteo-porosis. Being ignorant of the symptoms of this disease I trephined the nasal sinuses, and was at once struck by the abnormal thickness of the bone, and its extremely spongy character and great vascularity. On referring to Professor Williams' "Veterinary Surgery," I recognised the malady. The last mentioned animal died from general paralysis after a short time. About the same time I met with another case of Osteo-porosis in a pony mare, which presented the diagnostic symptoms of enlarged nasal bones and general paralysis. I learn from reliable sources that the disease in question is not at all uncommon in Eastern Bengal. I now submit that the first-mentioned pony (1) roared from a cause not hitherto described, and (2) that she furnished a case of Osteo-porosis having been cured by good food, and by the *vis medicatrix naturæ.*

The climate of Eastern Bengal is extremely damp and hot; hence the grass of the country, from its rank luxuriance, is for a considerable part of the year most unfitted to supply bone-forming material for young horses that have to depend on it for food.

No. 5.—*On "Cracked Heels."*

In India, race-horses are often troubled with a form of chronic cracked heels, which readily yield to rest, antiphlogistic treatment, and any of the ordinary applications, such as oxide of zinc ointment, but break out again the moment the animal resumes fast work, so that he becomes quite unable to continue it. The

predisposing causes are: The presence of dew on the ground during the early parts of the cold weather mornings, which is the time horses do their gallops; sudden drying up of the dew on the sun rising above the horizon; and rapid alternations of temperature. I have used and recommended, with signal success in such cases, the free application of undiluted carbolic acid, in the manner employed when treating "Grapes," although the extent of soreness of the cracked heels in question would apparently warrant nothing beyond the mildest remedies. The carbolic acid acts as a detergent, and by determining an increased supply of blood to the part, removes the condition of malnutrition and want of vitality under which it suffered. In these cases the feet and legs should never be washed; the brush, hoof-pricker, and dry rubber being all that is required to keep them clean.

Editorial.

TO OUR READERS.

WITH the present issue of the VETERINARY JOURNAL, we venture to chronicle two events which are, perhaps, not without significance to our readers, and are certainly of the highest importance, as well as being a source of the deepest gratification and pride, to ourselves. The Journal has completed its fourth year of existence, and we gratefully acknowledge that the measure of its success has far exceeded the limit to which our most sanguine anticipations carried us when we undertook to build, launch, and pilot it in search of public favour and support. With discouraging predictions from those whose nature is the opposite of generous, and whose predictions—fortunately for ourselves, and only too often unfortunately for others and the public—have never yet been realised, and with stimulating words of welcome and encouragement from others—by far the majority, whose ideas of progress and knowledge of the requirements of Veterinary science are in entire harmony with our own, we commenced our self-imposed task four years ago. The cares and responsibilities of editorship were undertaken and have been continued —as the cover of the Journal testifies—single-handed; for we were determined to rely upon the reputation we had already earned in the profession, and upon our own honest and independent efforts, to at least deserve success, if by mischance we did not succeed in obtaining it. For the way in which our resolve has been carried out we leave our large and increasing circle of readers to judge. Suffice it to say, however, that the objects we had in view at the commencement of our

undertaking have never for an instant been lost sight of. We have done our utmost to promote not only the interests of the Veterinary profession in all English-speaking countries, and more especially in these islands, but we have also endeavoured to place our science upon a higher level than it had hitherto occupied, and one more worthy of its merits. Previous to the advent of this Journal, it may truthfully be said that neither the profession, nor yet Veterinary science, had an adequate representative in English medical literature. Though still in its infancy, we dare to assert that the Journal has well and worthily fulfilled its mission, and that it has already done yeoman's service to both. We can look back with a feeling of intense satisfaction upon the progress which has been made since our first number was issued. The evil influence which had for so many years thrown a spell over the profession, and left its destiny in unkind hands, has been dispelled, never again to arise—if the profession is only true to itself; promoters of disunion and hostile charters have been defeated, and for perhaps the first time in its history the profession is a solid and united body, beginning to feel its strength, and to exercise it in the interests of humanity, science, and civilization. In spite of opposition and formidable obstacles, Veterinary education has made a great stride, and the days when illiterateness and rule of thumb knowledge were the characteristics of a "practical man" are no more; the aspirations of those who desired a more fitting testimony to their abilities, and of their anxiety to continue their studies for the benefit of the public, than the diploma of membership of the Royal College affords, can now be realized in the higher degree which is open to them. Within the last four years, also, Comparative Pathology and Veterinary Sanitary Science—almost unknown previously—have received a large amount of attention, and their great value to medicine and the public health and wealth are beginning to be recognized and acknowledged by physicians, legislators, sanitarians, and the public. In all this advancement we can claim a share, and to those steps which we have not inaugurated we have at least given our heartiest support.

Our pages have been open to the exposure of wrongs and the redress of abuses, and for the first time in this country the Veterinary profession could express itself freely and independently.

Such has been the history of the VETERINARY JOURNAL during its four years' existence; and its future will testify that as it gains in age it will lose none of its vigour, or disassociate itself from any of those attributes which have mainly contributed to ensure its success and influence. Need we say how much we owe, or how deeply grateful we are, to our contributors for the support they have given us. Since its commencement the Journal has been favoured with the assistance of the most enlightened and competent members of the Veterinary profession in this country, and never at any period has a greater desire been evinced to record opinions and experience in medicine and surgery than during the interval that has just elapsed. We look upon this eagerness to disseminate knowledge and discuss professional subjects as one of the surest and happiest signs of progress, and we cannot doubt that as education—general and scientific—is developed, so will this

evidence increase in quantity and quality. It will continue to be our study to foster and encourage this development.

The next event we venture to record, though more of a personal character, is nevertheless none the less significant and deserving of notice from us. The manifestation of good will and appreciation which had been made in our favour by members of the profession, and others, in every quarter of the globe is, we believe, without parallel in our annals; and the testimonial of which we have been the recipient is another proof of the advancement that has been made in professional *esprit* within the last few years. It is now nearly a quarter of a century since we began to pursue our labours in Veterinary and medical literature, and to prepare ourselves for the accomplishment of a task which could be nothing else than a labour of love. For in those days, and in fact until quite recently, there was no inducement or encouragement of any kind to work in this direction; indeed, those who should have themselves set an example, or who ought at least to have been the first to stimulate and applaud others, were either jealous, apathetic, or openly condemnatory. Professional literature, it may be said, we had none; and the absence of this, more than anything else, was adduced as evidence of our nescience and incapacity. A taste for literature or study would seem to have been discountenanced or repressed by those who were supposed to be at the head of the profession—possibly because they were afraid of being left behind in the acquirement of knowledge. Consequently, our science was unrepresented in the realm of letters, and our position was not to be envied. With the greatest empire the world has ever seen, and an almost incomprehensible wealth in animals, in the way of science and literature we were far behind the smallest Continental State. To aid in removing this most damaging stigma was surely a laudable object, and to it we set ourselves. Under almost every conceivable disadvantage and discouragement, and submitting to sacrifices which now, looking back, would appear startling, we have toiled unremittingly by day and by night, with no other consolation before us than that of doing our duty to a profession as useful, noble and humane as any in existence. We did not dream that we should live to see the day when our labours would be so handsomely acknowledged; and therefore the acknowledgment comes with all the more welcome and grateful appreciation. We esteem it not only as an inestimable compliment and reward to ourselves, but also as a guarantee of encouragement and appreciation for those who may follow in our steps, and labour as honestly, independently, and earnestly in the cause of Veterinary science as we have done. Hitherto, when a student left college he had no incentive to pursue his studies and to labour for the benefit and the elevation of his profession. Now this is changed, and we earnestly hope that the manifestation which has just been made will have its effect in bringing many workers into the field. We shall neither be afraid nor jealous of them, but welcome, aid and encourage them all we can, so long as their work is sound and good.

As for ourselves, though we have no desire to lag too long upon the stage, we shall still endeavour to carry out our programme to a successful

end, and continue to labour to enlighten and instruct for, we hope, some years yet to come: happy in the anticipation that we may perchance leave a footprint on the sands of time, and that our toil has not been in vain.

MUTARE VEL TIMERE SPERNO.

THE WAR IN ZULULAND.

IT is gratifying to be able to report that the large number of horses (more than 2000) hurriedly sent off from this country, in troop ships as hurriedly fitted up, have reached their destination in South Africa—a distance of some seven thousand miles—in good condition, and with the minimum loss of 2.77 per cent. Taking all things into consideration—and especially the long period on board ship (thirty to forty days), the extreme temperatures to which the horses were subjected during transit, the defective ventilation and accommodation in some ships, and other influences—this result of the voyage reflects the greatest amount of credit on the Veterinary Surgeons entrusted with such a valuable and (at this critical juncture) most important charge. Pneumonia, pleurisy, congestion of lungs, enteritis, apoplexy, and encephalitis appear to have been the chief disorders terminating fatally during the voyage. There was one ruptured stomach and one case of glanders. In the King's Dragoon Guards two horses died of sea sickness. There were no casualties during the disembarkation at Durban, notwithstanding the alarming reports as to the difficulties apprehended in landing horses.

We learn that sore backs are very numerous among the horses of the Native Contingents, but this is fully explained by the bad condition of the saddlery. No cases of Horse Sickness had occurred at Durban this season, though a newspaper reports that three of the Dragoon horses died of it within twenty-four dours. Every precaution was adopted for its prevention, and woollen nose-bags had been made for the horses to wear while the dew was on the grass. The army in the field now musters some 7000 horses, and the casualties are certain to be numerous. It is stated that the oxen are dying literally by hundreds of the disease called "red-water." In one convoy that left Maritzburg for Greytown, forty-three out of 120 oxen died on the way, most of them forty-eight hours after leaving Maritzburg. An animal will be to all appearances perfectly healthy one day, and able to do his full share of work; the same evening he sickens, and the next day he is dead, and this without premonitory symptoms of any kind.

CAN THE MILK OF PHTHISICAL COWS PRODUCE TUBERCULOSIS?

(*Concluded from page* 197.)

After thus alluding to the experiments and opinions favourable to the transmissibility of Tuberculosis by infected milk, we deem it our duty to mention the contradictory and negative experiments.

Harens and Gunther,* professors at the Hanover Veterinary School, in the course of experiments, otherwise positive, on the transmission of Tuberculosis by the stomachal ingestion of tuberculous matter itself, remarked that the young of a large number of rabbits, artificially tuberculized, were free from the

* *Zundel.* Chronique de l'Allemagne. Recueil de Med. Vétérinaire, 1873, p. 472.

malady when born. In addition, these animals, which were fed daily with the milk from their tuberculous parents, did not show any apparent trace of the disease at the end of ten weeks. The experiments were made on a somewhat vast scale on animals of the same species, and in the ordinary conditions of life—so that we cannot refuse them a very serious importance.

Dr. Schreiber,* in an inaugural thesis which we have been unable to procure, also states that he fed a great number of rabbits with the milk of a phthisical cow, and could not find in any of them the lesions of Tuberculosis.

Professor Perroncito, of the Turin Veterinary School, in a memoir full of interest on "Tuberculosis in the Animal Series,"† had occasion to assist, in 1875, in an involuntary experiment having man for its subject.

Perroncito had brought to his notice a cow, about seven years old, somewhat emaciated, but which yielded every day a somewhat plentiful quantity of milk. This cow, which appeared to be healthy, was sent to the slaughterhouse to be killed for food, and in the interval between its admission to the abattoir and being slaughtered, its milk was entirely consumed by the family of the porter of the establishment. This family was composed of the husband, aged 38 years, the wife, 33 years, and two boys of 3 and 10 years. These persons drank the milk every day, either freshly drawn or boiled and mixed with other food. This accidental experiment continued for eight days, at the end of which time the cow was killed.

At the autopsy, tubercules were found beneath the pleuræ, in the lungs, bronchial glands, liver and peritoneum—all in a very advanced stage. The udder of the cow was, however, perfectly healthy. When Perroncito's memoir was published, two months and a half had already elapsed since the abovementioned family had partaken of the milk in question, and yet no member of it had experienced the slightest disturbance in health.

But it must be remarked that this experiment had lasted only a very short time, especially when we compare it with the fifty days during which Gerlach administered to large animals (calves) the milk of phthisical cows. As the evolution of the malady might not have had time to take place in two or three months, we asked for further information from Professor Perroncito after three years had elapsed, and he writes to the effect that the family had remained in good health; so that it is still a negative experiment. But if we believe for an instant in the virulence of the milk, and the transmissibility of Tuberculosis by it, we should have here, at least, as much as in other transmissible diseases, numerous instances of immunity—so that we must not be in too great haste to draw conclusions from particular cases.

In all the works we have passed in review there are to be found a certain number of observations, the conclusions from which must only be of a provisional nature. The experiments show that, notwithstanding numerous unsuccessful instances, the ingestion of milk derived from phthisical animals appears to be capable of transmitting Tuberculosis—or at least a serious malady similar to that which affected the animal yielding the milk.‡ Perhaps other experimenters have been unsuccessful, but did not make their labours known.

* *Schreiber.* Zur Lehre von Artificieller Tuberkulose. Berlin, 1875.

† *G. Perroncito.* La Tuberculosi in rapporte colla Economia Sociale e Rurale. Turin, 1875.

‡ Certain authors, and among them, in France, is M. Trasbot, deny the histological identity of tubercle and this bovine Tuberculosis. But if the latter transmits a grave and mortal disease, it matters little, from our point of view, whether the malady is designated *Tuberculosis* or *Lympho-sarcoma.*

Taking the published documents into account, however, we may assert that the positive results make a good figure in the face of the negative results.

And there can scarcely be a doubt that, lately, tuberculous matter or milk have been only too frequently taken by chance from any kind of animal, while a choice has been made indifferently of any other creature to experiment upon. It seems, on the contrary, that there ought to be rules which should never be departed from, when it is desired to accumulate all the chances of success. In general, tubercle derived from herbivorous animals is with great difficulty transmitted to the carnivora, and reciprocally. The ingestion of tuberculous matter from the cow is usually without result in dogs, cats, &c., but with the herbivora, on the contrary—such as the calf, lamb, goat, &c.—it produces a rapid and serious tuberculization ; it is more uncertain with the rabbit, however.

It is probable that the reciprocity is real, but it must be admitted that there is very little opportunity for making this control experiment. Spontaneous tuberculization is very rare in the dog and cat, for instance, and I have not found any mention made of experiments in which the suspected products, and particularly the milk, obtained from tuberculous or tuberculized dogs and cats were mixed with the food of herbivorous animals. Researches in this direction would not be without interest.

The general rule we have just formulated is not, however, to be considered as absolute, and exceptions to it may be cited. The cats experimented upon by M. Viseur, of Arras, became tuberculous after eating the lungs of phthisical cows killed at the abattoir. One of the most curious facts in Klebs' memoir, is in connection with a dog which by chance, and beyond premeditated experiment, drank the milk of a cow in the last stage of Phthisis ; this dog became tuberculous in its turn, and this case furnishes, perhaps, the only instance observed in the canine species of the transmission of Tuberculosis by the digestive canal. The tuberculous matter derived from man appears to possess a much lower degree of virulence than that from the ox, and not only when it is employed on herbivorous animals, but also on the rabbit. Bollinger was unsuccessful with human tubercle in the pig, even though that creature appears to be very susceptible to artificial transmission ; but, on the contrary, with the same substance he had produced a generalized miliary tuberculization in the dog, which is nearly always refractory to bovine tubercle.

The choice of the species of animal plays a great part in experiments of this kind, and what is true for the caseous matter is doubtless true also for the milk obtained from diseased creatures. This is another reason for observing great circumspection in the conclusions we think we ought to draw from experiments made on animals, and which may certainly not be at all applicable to the human species, either in one sense or another.

The age of the animals experimented upon appears to us also to have a great importance in the result obtained. Klebs* has made the important observation, that tubercle, when transferred to a robust organism, may not develop itself ; or, even after its development, it is limited, disappears by absorption, and recovery is achieved. Analogous facts have been observed, I believe, in Behier's laboratory, by M. Lionville, and others have been more recently noted by M. Metzquer,† and to such an extent that it might justly be asked if something else than tubercle proper had been employed.

* *Klebs.* Ueber die Entstehung der Tuberculose und ihre Verbreitung im Körper. Virchow's Archiv, 1868, p. 242.

† Academie de Medicine, May 8, 1877 ; and Archives Vétérinaire d'Alfort, May 25, 1877, p. 390.

Young animals have only a feeble vital resistance ; their digestive apparatus being so predominant and manifestly active, while milk is their natural aliment. It is, therefore, with very young animals, still at the teat, that experiments as to the transmission of Tuberculosis by means of the milk have most chance of succeeding. Besides, with them we approach nearer the conditions which are of most interest in human hygiene—the action of this milk on young infants. And in order to obviate the influence simply imputable to the inferior quality of the milk and to its deficiency in nutritive matters, it would be necessary to feed one group of animals of the same species, and even of the same litter, with a moiety of well-boiled tuberculous milk, and the second group with the other portion of the milk, but uncooked, and preserving all its virulence—if such virulence really exists.

In all the animals rendered tuberculous by the milk of phthisical cows, there has been noted a very marked predominance of tubercles in the abdomen. When the animal is killed at a period but little advanced, the lungs are almost healthy, and only a small number of grey nodules are found in the parenchyma, or beneath the pleuræ ; the bronchial glands have alone commenced to offer caseous deposits ; and if the microscopical examination did not extend beyond the thorax, we might in some cases be inclined to believe that the animal was not infected.

But it is in the abdomen that we find the Tuberculosis transmitted by ingestion most concentrated. In the digestive canal the morbid manifestations appear to be first produced : stomachal and intestinal catarrh, diarrhœa, tumefaction of some of Peyer's patches, yellow granulations studding the inner surface of the intestine, caseous transformation of the mesenteric glands, and tubercular deposits in the liver, spleen, and kidneys.

It is impossible to refrain from comparing these artificially developed lesions with those observed in badly-nourished, puny infants, and especially in those which have been submitted to artificial nursing (*allaitement artificiel*), and who so frequently succumb to atrophy, scrofula, and abdominal tuberculization. In infants the respiratory organs are often free from tubercles, and they constitute a classical exception to Louis' law ; Phthisis in them is almost exclusively intestinal and mesenteric.

Without desiring to prejudge in any way the question as to the transmissibility of Tuberculosis by milk, it is certain that the disorders just mentioned are met with, not only in the infants of phthisical mothers who suckle them,* but also in those of healthy parents, and who have been prematurely weaned, and only too often fed on milk obtained from town dairies.

But in these dairies the prolonged confinement, want of space, insufficient ventilation, and exaggeration of the lacteal secretion—perhaps also contagion —engenders and propagates the disease, which really appears to be nothing else than the Pulmonary Phthisis of the bovine species. Gerlach, who was charged with the inspection of the dairies in the suburbs of Hanover, has at times found more than one-half of the milch cows affected with Phthisis ; and Dr. Bell, as we have seen, of eleven cows from the New York dairies, has asserted that ten had their lungs full of softened tubercles.

This frequency of the disease in the cowsheds of towns is unanimously

* We have thought that statistical researches might enlighten us as to the frequency of Tuberculosis in infants suckled by phthisical women, but two difficulties have presented themselves to us : if the child is suckled by its mother, is it from heredity or through the medium of the milk that the disease is transmitted? On the other hand, it is extremely rare that a hired nurse is phthisical—at least to any appreciable extent; as on the first indication of the malady she is always dismissed. It is very desirable that medical men should favour us with their experience on this point, no matter whether derived from private or hospital practice.

admitted by physicians, veterinary surgeons, and hygienists; and the principal customers of these establishments are chiefly very young children deprived of the milk of their mother or nurse. The milk is given unboiled, and yet warm from the cow; its purity is not suspected, as it was drawn in the presence of those who desired it.

It would be, doubtless, the height of temerity to assert that the wasting of infants had its origin in the milk of phthisical cows; but it is sufficient that this suspicion exists, in order that precautions may be adopted, and that the question may be closely studied. Besides this, it often happens that doctors recommend people threatened, or already affected, with tubercles, to drink the milk of the cow, ass, or goat, and while warm from the teat. Up to the present time, has attention been directed to the health of these animals? When we come to study the experiments of men who hold the first rank in veterinary science in their respective countries—Gerlach, Fleming, Bollinger—it is impossible for scruples not to be entertained; and while waiting until this scientific question shall be solved, prudence demands that in the large towns at least, *this milk should be submitted to prolonged and complete boiling before using it as food for children.* The precaution is simple and easy, and is almost certainly sufficient to avert all danger; it has the advantage of not withdrawing from consumption a large quantity of an aliment which, notwithstanding its relative poverty, yet possesses an undoubted nutritive power.

It would be useless at present to insist further on this important consideration, and it will, doubtless, suffice to have called attention to it, and to the fact that too much indifference has been exhibited towards it in France. In doing so I have to reply to the accusation brought against me, as to my raising such fears in the public mind without adducing sure proof of their being well founded.

Now, there are two ways of serving science: making personal researches on a debated subject, or inducing others to make such researches, and exciting discussion on an obscure or little-known point. If I have taken up the latter position, and so inversed the order of things, it is because there is, in my opinion, danger in delay, and also because I have encountered difficulties in experimentation, an enumeration of which may be, perhaps, profitable to those who desire to study this question.

When I commenced this study in October last, I particularly felt that above all things it was necessary to make new experiments, and, in order to do this, I began to look out for a cow in an advanced stage of Phthisis. This appeared to be an easy task, for the majority of authors have stated that nearly all the milch cows of Paris become tuberculous; yet during four month's search in forty dairies in the most populous and poorest quarters, I did not succeed in finding a very emaciated and coughing cow. I thought at first that the dairy-keepers were deceiving me—but I went into the cow-sheds, designedly entered into long conversations therein, so as to give me more time for observation, yet I never heard a cough. I have asked several veterinary surgeons to examine, with the consent of the owners, cows which looked thin and suspicious; but not one has been found tuberculous. I then betook myself to one of the abattoirs of Paris, hoping to find some information as to cows which had been refused admission because of disease, and the inspector obligingly gave me the following facts: 25,000 cattle came every year to the abattoir, and of this number only an insignificant proportion were poor or suffering from diseases of which Phthisis should be the chief; when these animals were killed, their viscera—and especially their lungs—were attentively examined, and only from 20 to 25 showed unmistakable traces of this malady annually. During four months I looked out on every side, and veterinary surgeons who were in a position to aid lent me

their assistance. M. Reynal, the eminent director of the Alfort School, kindly promised me his help, and promised to inform me when he knew of a diseased cow. But notwithstanding all this, I could not succeed in finding in Paris a single animal affected with *advanced and incontestable* Phthisis, so that I could not possibly commence my experiments earlier. At the first glance such a statement appears startling, and yet it may without difficulty be explained by the two following statements :

1. The dairykeepers of Paris have a double interest in not keeping a tuberculous cow in their dairy. When a cow becomes phthisical, the yield of milk generally falls from 20 to 4 or 5 litres a-day—so that the expense of keep much exceeds the amount gained. Finally, when the disease is decidedly present, the animal loses all its value, and the owner can find no one to purchase it at any price. If he sends it to the abattoir for food, it stands every chance of being refused because of its leanness—perhaps it will be seized and destroyed as unfit for food. Therefore it is that, for many years, these dairymen—understanding their own interests—no sooner observe one of their cows commencing to cough and give less milk, than they sell it to a feeder of stock, who fattens it rapidly, and the animal is killed and converted into beef before the pulmonary lesions have made much progress.

When by chance the disease is too advanced, and the cow is very emaciated, the low dealers buy the cows at a low price and kill them beyond Paris; they are then sent there in quarters and hawked about (*vendus à la criée*), after escaping the vigilance of the inspectors.

We see, then, that careful inspection of the abattoirs and butchers' stalls produces and explains the rarity of phthisical cows in the dairies of cities and in the abattoirs, to the great profit of hygiene. And this result is not obtained only in Paris, but also in Bordeaux, Lille, etc. At Augsburg, where the surveillance of abattoirs is rigorous, of 12,205 cattle above a year old sent to them, Adam only found 64 tuberculous in 1871 ; in 1872, of 10,463, he found 133—107 of which were milch cows.* On the contrary, in the neighbourhood of Jena, according to Zurn, the proportion of phthisical cattle is from 16 to 20 per cent., which leads to the suspicion that the abattoirs are not inspected.

2. The second—or at least apparent—cause of infrequency of Phthisis in dairies, is the very great difficulty in diagnosing the malady when it is not in an advanced stage. This difficulty is incontestable, and recognised by all veterinary surgeons ; it is sufficient to remember that Gerlach, the director of the Berlin Veterinary Institute, when he wished to repeat his attempts at the transmission of Tuberculosis by milk, in 1873, completely failed ; and then only he discovered that the reputed phthisical cow was affected with quite another disease. But the mistake is usually made in another way. Fleming, Baillet,† Van Hertsen, and indeed all authorities, recognise that even a very advanced degree of Phthisis is often compatible with a healthy appearance and condition that leave nothing to be desired.

One is sometimes very surprised to find, at an autopsy, very grave alterations in the lungs of cows whose state of health had not been suspected, and which even continued to give a good quantity of milk.

It is therefore probable that this infrequency of Phthisis in the Paris cowsheds is more apparent than real ; and if there is difficulty encountered in finding animals suitable for experiments, it should not therefore be concluded that there is no danger to be apprehended from the milk of phthisical cows, even in case the noxiousness of this milk should be more completely demonstrated.

* *Adam.* Wochenschrift für Thierheilkunde, 1872, No. 9.
† *Baillet.* Traité de l'Inspection des Viandes de Boucherie.

For several weeks, thanks to an obliging friend, I have succeeded in procuring milk from a phthisical cow; experiments have been commenced, and when they are finished I shall deem it my duty to submit the results to the Society, whatever they may be. If they prove that the milk of phthisical animals is dangerous, it will then be time to formulate measures capable of protecting the public health. In the meantime, it appears in every way prudent neither to use, nor recommend to be used, uncooked milk except in cases where there can be no possible doubt that the cows which have furnished it are in good health.

REPORT ON THE EXPERIMENTS AT THE BROWN INSTITUTION ON PLEURO-PNEUMONIA.*

THE inquiries which were undertaken in 1876, relating to the origin and nature of Pleuro-pneumonia, and to the use of inoculation as a means of preventing its spread, having now been brought to a conclusion for the present, in consequence of the legislative difficulties which stand in the way of further experiment, I beg leave to submit to the Council the following statement of the results of our labours:—

The circumstances which led to the inquiry were set forth in a preliminary report which was published in 1876. At that time no experiments had been made, but our first batch of experimental animals had been purchased, viz., two cows, two calves, and four other animals of different ages. They had been kept at Wandsworth Road for three months—a time which we considered sufficient, but not more than sufficient, to afford security against previous infection. I then stated that we should exclude any *living* source of infection from our premises, but would "try, in succession, every channel of mediate contagion known to us, using in our experiments all that deliberation and caution which the consideration of the importance and difficulty of the inquiry enforced upon us."

Before proceeding with the narrative of our experiments it will, I think, be useful to state somewhat more fully than has hitherto been done the nature of the practical questions which we have had in view, some of which have now assumed a greater importance than they had at the outset. Our objects have been (1) to ascertain by experiment by what different ways a healthy animal can be infected; (2) to ascertain whether inoculation is practically useful; and (3) to discover a way of inoculating an animal without risk.

With reference to the first point, the opinion generally entertained is, that a healthy animal may get Pleuro-pneumonia either directly from a diseased animal, or indirectly by being brought into relation with its hide or carcase, or with persons or things that have been in contact with its body. Thus, Mr. Fleming, the author of the well-known "Manual of Veterinary Sanitary Science," expressed his belief very decidedly in 1875, that "infection may occur through the medium of forage, straw, etc., which have been soiled and breathed upon by infected cattle, by the utensils which have been used with them, as well as by the persons who have attended to the sick;" and has since that period expressed the same opinion in still stronger terms. An opposite view had, however, been guardedly promulgated by a very high authority. In the excellent article by Professor Brown on the contagious and infectious diseases of animals, which appeared in the tenth volume of the "Journal," the author said, that "so far as his own observations had enabled

* By Dr. Burdon Sanderson, and extracted from the Journal of the Royal Agricultural Society for 1879.

him to decide, the disease is only communicated by the actual contact of a diseased animal with a healthy one, and that it is at least exceedingly probable that the mode of communication is by the inhalation of the breath of the diseased subject."

With reference to the second question, that of the utility of inoculation, opinions are also, as needs scarcely be said, much divided, although the majority are in its favour. One of the strongest arguments against it is founded on the acknowledged fact, that although inoculation as ordinarily practised produces very severe effects, yet these effects are neither the disease itself nor any modification of it. It has, indeed, been alleged by some authorities that actual lung disease can be generated by the insertion under the skin of bits of diseased lung; but this inference, which if it were well established would be of great importance, can be shown to be mistaken. The observations quoted in support of it are too good to be true. In most instances the time which intervened between the inoculation and the appearance of lung disease was far too short; for we have evidence from the pathological inquiries of Professor Yeo, as well as from other sources, that the development of the disease in the lungs requires a very long time, and usually produces no obvious symptoms at all until it breaks out in the acute form in which it is ordinarily recognised. Consequently, the appearance of symptoms within a week or two after inoculation could not reasonally be referred to the operation as their cause: so that we need not hesitate to conclude that the animals in question had been previously infected by other means.

Another statement that has been made with reference to the mode of action of inoculation is equally unfounded, viz., that although inoculation never produces actual Pleuro-pneumonia, yet that it gives rise, at the place where the morbid material is introduced beneath the skin, to a local disease which is of the same kind as the real disease of the lungs, and that consequently the effect of the inoculation is to produce a sort of Pleuro-pneumonia of the skin! Now it is quite true that there is a great resemblance between them—a likeness sufficiently striking to have impressed some very well-informed persons—but very little stress ought to be placed on it. All inflammatory exudations, whether specific or not, are very like each other as regards their chemical and anatomical characteristics; so much so that it is not possible to distinguish them from each other, excepting by their disease-producing properties. In other words, the only way in which it would be possible to prove that any diseased material derived from the skin of the inoculated animal was pleuro-pneumonic, would be by showing experimentally that when introduced into another animal it produced Pleuro-pneumonia. If this proof were given we should have a right to conclude from analogy with similar cases, that in all probability immunity would be conferred on the infected animal; but in the absence of such proof, the only way in which the protective power of inoculation can be settled for practical purposes, is by observing whether inoculated animals can get Pleuro-pneumonia by exposure.

The experiments which had previously been made for this purpose were unquestionably in favour of the protective power of inoculation. The inquiries of the French Commission, carried out in 1851, in which fifty-four animals were experimented upon at an expense of £2,400, led to the conclusion that "inoculation possesses a preservative power conferring on the inoculated animal an immunity which protects it from the contagion of the disease for a time which remained undetermined," inasmuch as the experiments could not be continued for more than six months. This conclusion, founded on experiments which were evidently conducted with the utmost care and impartiality, has been largely confirmed by the trials which have been made of the practice by owners of stock in this and other countries, and particularly

in our Australian colonies. It appears from a recent Government Report, that in the colony of New South Wales the practice of inoculation has been so successful as a preventive that it has become general; so much so, that the chief inspector of the colony was prepared, in 1876, to recommend to the colonial government that it should be made compulsory.

But the proof of the protective power of inoculation, even if it were much stronger than it is, would afford an insufficient reason for recommending it as a practice, unless it can be shown that the third question—that which relates to the risk of the operation itself—admits of a satisfactory answer. On the ground of its danger the French Commission, notwithstanding their opinion as to its protective power, declined to recommend it as an economically advantageous practice: for they considered that their own experiments showed "that inoculation causes a larger mortality than the disease which it is intended to prevent." No less than 11 per cent. of their animals had died, whereas it was extremely improbable that so large a number would have been sacrificed had they been subjected without inoculation to the ordinary risks of infection. Notwithstanding these facts, the Commission, of which M. Bouley was the Secretary, recommended that it ought to be encouraged, on the ground that, its protective power having been demonstrated, the dangers above referred to would be diminished by improved methods.

Inoculation is usually performed by inserting the liquid which drains from diseased lungs into the cellular tissue. The situation chosen for the purpose is the end of the tail. The reason why this part is selected is, that if, as often happens, the local inflammation becomes excessive, it may be limited by amputation. But notwithstanding this safeguard, the diseased action is apt to spread to the neighbouring parts, in which case it occasions serious illness and often death.

The position of the question was therefore clear. The protective power of inoculation, though by no means definitely settled, had been rendered sufficiently probable to justify a more extended trial than it had as yet received. But the effects of the operation as hitherto practised were sometimes so severe that it appeared probable that the risk would more than cover the advantage.

One of the first objects which we had in view in our experiments was to test the possibility of communicating Pleuro-pneumonia by mediate contagion. The lungs of animals which had been slaughtered in an advanced state of the disease (see Appendix I.) were placed, in the fresh state, under the noses of ten healthy animals of all ages. As none were infected, it did not seem necessary to repeat the trials in a systematic manner, the more so as the persons who attended on the animals were in the habit of handling the diseased organs, which were at that time frequently brought to the Institution for pathological examination.

The experiments on inoculation were commenced in September in 1876. The first practical question which required an answer was whether it was possible by taking extra precautions in the collection of liquid, and particularly by using it only in an absolutely fresh state, to avoid the inflammatory results which have been above described. Five animals were inoculated with perfectly fresh material from a cow killed the same morning (see Appendix II.). A few drops of the clear exudation liquid from the lungs were injected under the skin either of the shoulder or of the side of the neck. For five days the animals remained well; on the sixth day a swelling appeared at the puncture, which gradually increased. In three of the cases it began to subside a week after it had commenced, and eventually disappeared; but in the other two it went on increasing until it had involved the integument of the neck, chest, and belly, at length causing death by general infection, in the one case on the twelfth, in the other on the fifteenth day of the illness.

It is to be noticed that the animals exhibited no loss of appetite, nor any other sign of general disturbance, until the third or fourth day after the swelling appeared, nor did the temperature begin to rise in any instance until that time (see Appendix II.). In the two fatal cases the highest temperature, four and a half degrees above the natural standard (106·4° Fahr.), was reached three days before death.

The mode of progress of the illness indicated very distinctly that, although we had not communicated Pleuro-pneumonia by our inoculations, we had introduced an infection of another kind. If the liquid injected had been a mere irritant it would, if its action had been intense enough, have produced a limited abscess, not a rapidly-spreading and diffuse infiltration. That this was so was confirmed by the appearances observed after death. The internal organs, and in particular the lungs, were found to be perfectly healthy; but the serous membranes exhibited the appearances ordinarily observed in animals that have died of acute general infection—that is, from what is popularly called blood-poisoning.

In the cases I have related, the effects of inoculation were, as has been seen, severe in every instance; for even in the three animals that recovered, the disturbance of health, as indicated by the high temperature and general state of the animal, was considerable. When the tail is selected as the seat of inoculation the case is much more manageable. Here, as before, it is not until the fourth or fifth day that the seat of puncture becomes painful and swollen. The swelling continues for about a week, by which time a slough of dead tissue has usually formed, which eventually separates. About the time that the slough comes away secondary swelling usually begins, and gradually extends to a greater or less distance towards the root of the tail, until, in unfavourable cases, the neighbouring integument is involved, becoming the seat of diffuse cellular infiltration of the same kind as that which has already been described. In the ordinary case, a common result of tail inoculation is that part of the organ separates by necrosis, an event which is often not attended with any serious disturbance of the animal's health (see Appendix III.).

There are two reasons why inoculation, as practised in the above instances, is necessarily attended with danger. One of these is, that the liquid used, however carefully it is collected, not only contains the virus of Pleuro-pneumonia, but possesses morbific properties of another kind, which are due to its being the product of an unhealthy, or, as it is often called, an infective inflammation—properties which would have manifested themselves if, instead of the juice of a Pleuro-pneumonia lung, we had used any other exudation-liquid of a similarly infective character. A second source of danger is, that the living tissue which serves as the channel of introduction is one which we know to be particularly susceptible to infective influences of this kind. By previous experiments, relating to another inquiry, we had found that this second danger could be avoided by infusing the morbific liquid directly into the circulation. We therefore resolved to adopt this plan, feeling sure that, if the Pleuro-pneumonic virus possessed any protective power at all, that power would be exercised to the greatest advantage if the liquid were mixed with the circulating blood; for in this way it would necessarily come into contact, not merely with any particular part, but with every organ in the body. Another advantage which the method of infusion into the blood-stream offered was, that from fifty to a hundred times the quantity of liquid could be introduced at once, and thus the chances of infection be vastly increased.

Fourteen animals were thus inoculated (see Appendix IV.). The instrument employed was a syringe, capable of containing two drachms of virus, and furnished with a slender, sharp-pointed steel tube. The point was made to enter the principal vein by which blood returns from the back of the ear,

and was usually secured by a ligature. The syringe was then slowly discharged, the greatest care being taken to avoid contact with the cellular tissue. It was often unnecessary to divide the skin. The whole operation was conducted without any appreciable suffering to the animal.

In the first batch of eight animals the operation was, in all but one, performed twice in each case, at an interval of several weeks, with a view to greater certainty of result. With the exception of a small prominence which marked the seat of the inoculation, and subsided in a few days, it was in general followed by no morbid effects, either local or constitutional. In one instance, however, that of an old cow, unfavourable symptoms presented themselves on the sixteenth day after the infusion. On that day the bodily temperature, which at the time had been natural and had until then continued so, rose to 103·2° Fahr., and on the day following to 105·6°. At this point it remained until the twenty-second day, after which it declined till death, which occurred two days later. The rise of temperature was attended with other signs of fever, and with difficult breathing, which continued to the last. The post-mortem examination revealed that the cause of death was an acute double pleurisy; but in addition to this there were appearances which showed that the animal, which was thirteen years old, had suffered from chronic lung disease of very old standing. This, although not the immediate, was the predisposing cause of death. The immediate cause was, I have no doubt, the infusion, which, acting on the pre-existing disease, occasioned consequences to which a healthy animal would not have been exposed. It is perhaps desirable to add, that the affection of the pleura from which this animal suffered, although properly called a pleurisy, was of an entirely different kind from the pleurisy which forms part of Pleuro-pneumonia. The sub-pleural tissue, which in the contagious disease is the principal seat of alteration, was in this animal entirely unaffected; nor were any of those characteristic changes in the lung tissue observed which have been so well described by Mr. Yeo in this "Journal." We are therefore justified in concluding that, whatever may have been its antecedents, it was free from Pleuro-pneumonia during the time that it was under observation.

The remaining seven animals were, as has been already reported to the Society, exposed to the infection of Pleuro-pneumonia in the most effectual manner that could be devised. They were removed from the Brown Institution, and placed in sheds which were at the time occupied by diseased animals, and in stalls in which such animals had stood. They remained under these conditions for three months, and in some instances for four, after which they were kept under observation for periods which in the majority of the cases extended to six months. None of them showed any signs of infection. In those that were slaughtered (see Appendix V.) the lungs and other internal organs were found to be perfectly healthy.

(To be continued.)

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL GENERAL MEETING, HELD MAY 5TH, 1879.

THE thirty-sixth annual meeting of the Members Politic and Corporate of the Royal College of Veterinary Surgeons was held by advertisement, and in accordance with the provisions of the Charter, on the first Monday in the month of May, being the fifth day thereof, 1879, at the College, 10, Red Lion Square, Holborn, London.

GENL. SIR FREDERICK FITZWYGRAM, Bart., President, in the chair.

Present:—Professors Pritchard, Williams, and Axe; Jn. Atkinson, James Collins, Esq., Principal Veterinary Surgeon to the Army; Messrs. T. Avis, G. Balls, jun., G. A. Banham, T. D. Barford, H. T. Batt, T. G. Batt, R. B. Beman, W. G. Boswell, T. Briggs, Jas. C. Broad, Alfred Broad, Jas. Broad, jun., Jas. Hall Brown, J. S. Brunskill, J. R. Carless, Jn. G. Cattrall, Alb. R. Charles, T. G. Chesterman, Wm. Clark, M. Clark, F. J. Covington, P. S. Cowan, Jas. Cowie, Josh. Davies, E. M. Davy, E. L. Dixon, E. C. Dray, E. A. Drewe, Hy. Dyer, J. W. Evans, Edw. Faulkner, G. Fleming, Jas. Freeman, Jn. Gerrard, H. D. Gibbings, J. M. Gillingham, T. W. Gowing, T. W. Gowing, jun., Thos. Greaves, Jas. Hall, G. A. Hall, H. J. Hancock, M. J. Harpley, W. Stanford Harrison, F. T. Hart, W. Helmore, J. Woodroffe Hill, T. Hopkin, Jn. Howard, D. Hutcheon, Osborn Hills, Wm. Hunting, J. T. King, Alex. Lawson, Josh. Leather, P. Martial, M. Mence, Jas. Moon, Jas. Moore, Thos. Moore, M. E. Naylor, J. F. Oliver, Alf J. Owles, W. F. Peacock, Hy. Peele, T. S. Price, A. B. Proctor, Wm. Rogers, Rd. Rowe, Jas. Rowe, Jas. Rowe, jun., F. G. Samson, C. C. Sanderson, W. D. Sartin, H. K. Shaw, C. Sheather, H. J. Simpson, F. Smith, W. South, D. R. Sowerby, Percy B. Spooner, F. J. Stanley, Jn. H. Steele, T. W. Talbott, P. Taylor, T. Taylor, W. A. Taylor, T. Thursfield, W. S. Wallis, Robt. Ward, Jn. Ward, C. J. Whitworth, G. Williams, E. Woodger, F. W. Wragg, and the Secretary.

The SECRETARY read the notice convening the meeting; also the minutes of the previous meeting, which were confirmed.

The SECRETARY read the notice in the *London Gazette* convening the meeting.

The minutes of the previous meeting were read and confirmed.

The SECRETARY read the Annual Report, which contained a summary of the labours of the Council during the year. As these labours have been already reported in detail in the "Proceedings of the Royal College," published in the VETERINARY JOURNAL, to save valuable space we omit their republication.

The following is a statement of the attendance of Members at the Council meetings held during the year 1878-9:—

Vice-Presidents.

Thos. Wm. Gowing	2	Robert Lewis Hunt ...	0
Henry Joseph Cartwright ...	4	James McCall	1
Samuel Hicks Withers ...	4	George Williams	4

Council.

Gen. Sir F. Fitzwygram ...	7	George Fleming	4
James Collins	8	William Pritchard	3
William H. Coates	8	William Williams	3
George Morgan	4	Hartley Thos. Batt	7
James Freeman	4	Thos. Greaves	5
Alfred Brooke Proctor ...	2	Geo. T. Brown	3
Peter Taylor	6	E. Coleman Dray	8
John Cuthbert	5	Jas. Beart Simonds	2
Richard Samuel Reynolds ...	3	Jas. C. Broad	5
Francis Blakeway	6	James Moon	4
Benjamin Cartledge ...	2	Jn. Roalfe Cox	3
Matthew J. Harpley ...	3	George Balls	5

The Financial Report is annexed. The Balance in hand after defraying the expenses of the year amounts to £330 os. 5d. In addition, the Council had the satisfaction to announce that the sum of £300 had been invested in 3 per cent. Consols.

Dr.

	£	s.	d.
Balance at Bankers', April, 1878	528	5	11
Examination Fees to March 31st, 1879	1126	13	0
Fellowship do.	63	0	0
Dividends	18	16	6
Legacy from the Estate of the late William Field, Esq., jun.	104	6	8
Copies of Register	11	2	0
Registrar's Fees	0	10	0
Property Tax	2	1	8
Gas consumed by C.V.M. Soc.	1	17	6
	£1856	13	3

Cr.

	£	s.	d.
Examiners' Fees and Expenses	723	0	3
Rent	100	0	0
Rates and Taxes	39	17	0
Salary to Secretary ...	150	0	0
Insurances	1	18	0
Printing and Purchase of Type	63	10	10
Advertisements	11	4	4
Stationery and Postage Stamps	26	16	0
Reporters	11	0	6
Coals, Gas and Wood ...	23	9	6
Specimen Drugs and Preparations in Museum ...	3	9	11
Repairs and Bookbinding	16	8	9
Wages	20	0	0
Petty House Expenses and Messenger	35	11	6
Investment Purchase of Consols	300	0	0
Banker's Charge and Commission	0	5	6
Balance at Banker's ..	330	0	5
	£1856	13	3

Amount of Stock standing in the names of the Trustees, £952 13s. 8d. Three per cent. consols.

On the motion of Mr. DRAY, seconded by Mr. W. S. WALLIS, the report was received.

Mr. DRAY moved, and Mr. GOWING seconded the adoption of the Report.

Mr. HUNTING said there was one paragraph in the Report which, he thought, ought not to be adopted, namely, the paragraph in the proposed new Charter, which provided that all votes of members of the College should be given by voting papers. By this arrangement all the old methods of voting would be, he thought, entirely upset, and there would be no voting at the annual meeting. There were many reasons why the members should not be elected until the Annual General Meeting. The members would then see who had most often attended the Council meeting, and who were therefore most worthy to be their representatives on the Council, and could at the last moment vote for whom they chose, on his merits.

The PRESIDENT explained that the clause was inserted on behalf of the interests of the London members, who, through not being able to vote by papers, were placed at a disadvantage as compared with country members who had that advantage.

Mr. HUNTING said his suggestion was, that the country members should vote in the room.

The PRESIDENT said that already the system of voting consumed a great deal of time, and he thought that Mr. Hunting's suggestion would not be found practicable.

Captain B. H. RUSSELL (of Grantham) thought Mr. Hunting's objection might be met by sending a statement to the country members, showing the number of times the various members of the Council had attended the meetings.

The PRESIDENT said it was quite competent for Captain Russell to make

a motion to that effect ; but it must be remembered that the statement would apply to the old members and not to the new candidates.

Captain RUSSELL then proposed "That a statement be affixed to the voting paper sent round to the country members showing the number of times each member of the Council attended the meetings."

Mr. ROWE seconded the motion.

Mr. FLEMING pointed out that the statement of attendance was not always to be relied upon, because the absence of some of the members was to be accounted for by the fact that they were doing the business of the College elsewhere. He thought if such papers were sent down to the country, as proposed by Captain Russell, a statement should be appended, when necessary, to the effect that the members were absent on College duties.

Mr. P. TAYLOR supported the clause as it stood, contending that it would give every member of the College a just and equal right of voting.

Mr. HUNTING moved that an alteration be made in Clause 3 in the Supplemental Charter, to the effect that "such voting papers be transmitted under cover to the Secretary of the College not less than one week after the annual general meeting has taken place."

The PRESIDENT said the motion could not be entertained, because the Charter expressly provided that the Council should be elected at the annual meeting.

Mr. HUNTING said he would alter it to "on or before the day of the annual meeting," and the votes could be scrutinised on the following day. All other minor matters, such as the insertion of the number of attendances, could be regulated by the bye-laws.

Mr. CHARLES seconded Mr. Hunting's motion as amended.

Mr. FLEMING said it had hitherto been the rule of the College at the annual meeting to name the members of the Council who were elected. If the voting papers were received on the day of the annual meeting, it would be impossible for the Secretary to have them arranged in time for the scrutineers. If members were anxious to vote he did not see why they should not send in their votes at the proper time. The Charter specified that the members of the Council were to be elected at the annual meeting, and if they were not so elected they would not be elected for the next year. He protested against the proposed alteration in the conducting of the business, because it would throw the whole of their working out of gear; therefore, he begged to move as an amendment, "That the voting papers be not received later than a day before the annual meeting."

Mr. TAYLOR seconded the amendment.

The PRESIDENT said the Secretary had informed him that it required three days to arrange the voting papers. It was a great convenience to the members to get the election finished at the annual meeting, and there would be great practical inconvenience in putting it off for some days.

Mr. HUNTING'S motion was then put and lost.

Mr. MOORE proposed that the report should be sent to the members some days or a week previous to the holding of the annual meeting ; it would then contain the number of attendances and the reasons for non-attendance.

Mr. HELMORE seconded the proposition.

Mr. FLEMING pointed out that after the report was sent out there might be some meetings held on urgent business, the report of which could not be included.

Mr. HUNTING supported Mr. Moore's motion.

The PRESIDENT saw no objection to Mr. Moore's proposal, and said that if any meeting should take place after the report was issued a supplement might be made to the report and presented to the meeting. As regarded the number of times the members had attended the meetings there was a great

deal of fallacy, because a great amount of the work of the Council was done at the Committee meetings and Sub-Committee meetings which were not registered at all. He should be happy to support Mr. Moore's motion, but he did not think that Mr. Fleming's idea of inserting the reason why members were absent could be carried practically into effect.

Capt. RUSSELL said that if Mr. Moore agreed to the insertion in the annual report of the number of attendances of members of the Committees, he would withdraw his motion.

This being agreed to,

The PRESIDENT then put Mr. Moore's motion amended as follows:—"That the annual report be circulated to the members of the profession twelve days previous to the annual meeting along with the voting papers, and that the number of attendances of the members of Council on Committees be inserted in the report."

The motion was put and carried, as was also the motion for the adoption of the annual report.

The PRESIDENT then submitted a motion, the effect of which was to entrust to the Council the election of scrutineers at their meeting previous to the annual meeting, thereby facilitating the despatch of business.

Mr. HELMORE seconded the motion, which was carried.

Mr. WALLIS, of Halstead, called the attention of the meeting to the following case. He said he had educated his youngest son, who was now twenty-one years of age, with a view to his succeeding him in his business. He had been with him in practice three years previous to his matriculation, and he entered the Royal Veterinary College in October, 1877. He had been told that his son had creditably passed all his preliminaries, and both the principal and professor had expressed to him their surprise and disappointment at his rejection by the Board, and said they could only account for his failure on three occasions by his extremely nervous temperament, and his getting confused and muddled in the presence of strangers. He (Mr. Wallis) could not tell how burdened he was with sorrow at the result. He had worked hard and successfully for more than forty years, and began to feel that he wanted his son to assist him in advancing age. His plans and hopes, however, as well as those of his son, were entirely frustrated by the 37th bye-law, and his son, whose character and conduct at the College had been irreproachable, was shut out from the profession and doomed to suffer life-long disgrace, and would have to seek other employment in order to maintain himself. He (Mr. Wallis) was unwilling to think that there was a single gentleman in the room who, by supporting the rule, would drive him to adopt so sad an alternative, and he earnestly hoped to have the sympathy and help of the meeting in his trying position. In February last, Mr. Taylor, at a Council meeting, had characterised the restriction as cruel, oppressive, and unjust both to the student and his parents. Their esteemed President took a different view, and regarded the rule as useful and beneficial, and as being advantageous to the student in checking his idleness, and to the father in preventing his son wasting his time at college. He had no doubt that both gentlemen were honest and sincere in their respective views, although he could not think the terrible power and far-reaching disastrous and irreparable consequences of the ruin could have been perceived by the valued and honoured friend who supported it. He was quite sure that the President would not intentionally say or do anything to damage or hinder the profession at large or one of its members; and seeing the ruin the retention of this rule would bring upon him and his son, he trusted the President might be inclined to vote for its abandonment; he would therefore more, "That the Council be requested to take Rule 37 into consideration with a view to its repeal."

Mr. PETER TAYLOR said he had great pleasure in seconding the motion.

He had already given notice of a motion that the bye-law be expunged. Being the father of a large family he felt most grievously the effect of the rule on children who were nervous, or who had not the facility that experience would give them in answering questions before their examiners. He had previously brought the motion for the rejection of the rule before the College, but their honourable President thought it just and right to bring forward an amendment, and upon that amendment there were equal votes. Still, he hoped to see the day when the rule would be expunged, because he considered it iniquitous and unjust. He thought if a student paid his fees and passed his matriculation and examination he had a perfect right as a gentleman to go within the walls of any college and be educated by the professors until he had the ability to entitle him to his diploma, otherwise, a class of men would be produced who by-and-by would get their living by empiricism. He had stated on the previous occasion that there were three large bodies, the legal, the medical, and the clerical, who had no such bye-law. If some of the students who had been thus rejected had had sufficient time they would probably hereafter be an ornament to the profession and fulfil their position as honest men and as Englishmen.

Mr. HUNTING said he was a free trader in everything, and he did not see why the rules of free trade should not be applied to education as well as to other matters. He thought, after a man had paid his fees at college and studied there, he ought to be allowed to go up as often as he liked. He thought that they had better make twenty mistakes before they did an act of injustice, such as had already been done to the gentleman whose case had been mentioned to the meeting.

Mr. GOWING said he agreed with the remarks made by Mr. Hunting. Many young men, however, had resolved to go up for examination, as they said, until they tired the professors out of it. He was of opinion that the fee should be increased in order to stimulate these young men, but not such as would restrict them from presenting themselves for examination for the diploma.

Professor WILLIAMS said, as one who had objected to Bye-law 37, he was glad to see there was a movement for its repeal. He had objected to the bye-law as being unjust to the student, and as being calculated to press heavily on some deserving individual. He would give the repeal of the bye-law his heartiest support, and he thought, with Mr. Taylor, that it ought not to have been inserted. It was originally framed for the purpose of getting rid of a number of young men who had been at the school for a number of years and had not worked. At that time the students of the schools paid a perpetual fee of 25 guineas, for which they had the privilege of attending at such a school for any number of years; but now the perpetual ticket had been abolished, and it was in the power of every individual school to refuse admittance to those students whom they thought were not doing their duty towards their parents. He thought the new members, whoever they were, would do well to support Mr. Taylor in the abolition of what he would call an unjust bye-law.

Mr. GREAVES said he was the unfortunate seconder on two occasions of the motion for the rejection of the bye-law which had been put to the Council and lost. He also had a strong feeling that it was an injustice to many students. He quite agreed with the Professors from the London Colleges who urged that the motion should be carried on account of some students who were black sheep, and who did more harm than good among other students by leading them astray from their studies. It was, however, within the provisions of every college to act individually and expel such students. Another reason why the bye-law was made was that at one time the Royal College of Veterinary Surgeons had very little funds, and there

had been several occasons when a number of rejected students came up, and the examiners had to be called together at a cost of between £30 or £40, for which they did not get a return of a single penny. This was not the case now, however. He agreed with Professor Williams and Mr. Taylor that the bye-law ought to be abolished, and that a young man should be at liberty to present himself before the examiners as often as was necessary, although he would not let him pass simply because he had the idea of tiring the examiners out. A young man ought never to receive a diploma until he was deserving of it. He thought the bye-law should be rescinded in order to give an opportunity to students to become professional men instead of going into the country and being quacks all the days of their lives.

Mr. COLLINS said he was one of those members of Council who had opposed the motion put by Mr. Taylor, and he did it on the ground that the Governors of the Camden Town School found that thirty or forty students had been rejected as many as five or six times ; at all events many of them had been attending College for five or six years. He thought it was very objectionable that this large number of idle students should be able to attend the College so long. They obstructed the study of others, and also brought discredit on the College. Men like these, as long as they could find their parents and friends willing to furnish them with money, would continue to attend, and were very indifferent as to whether they passed their examinations or not. No doubt, to a certain extent, as Professor Williams had said, the question was one for the schools entirely, but the Council was the guardian of the profession, and regulated the course of study, the examinations, and everything connected with the students ; and, therefore, he thought on that one point they were in a better position than the schools to decide as to how often students should be examined. He begged to propose that the bye-law stand as it is.

Mr. SIMPSON seconded the motion. In doing so he said that in all legislation there were individual cases of hardship, but they must legislate for a body, and not for an individual. If the Council had thought it best in their judgment to make such a bye-law, then it ought to be retained. With all due respect to the gentleman whose case was now before the meeting, he thought that such a quality as the want of confidence or extreme nervousness would be a great hindrance to him in his profession.

Mr. MOORE said that it was not always the fault of the pupil who was rejected, but sometimes it was as much the fault of the professors or the examiners ; therefore, he thought the rule was a most ridiculous one. He knew students who had been rejected in the Edinburgh School merely because they were a little nervous, or from some stupidity or spite on the part of the examiner. One examiner had got hissed out of the place, and his hat knocked over his eyes because he rejected a pupil.

The PRESIDENT said that if Mr. Moore desired *bona fide* for a Committee to inquire into the conduct of the examiners he would second the motion with pleasure, but he was not prepared to hear such statements made against the conduct or efficiency of the examiners without their being substantiated.

Mr. FLEMING, as one of the first examiners who went from England to Scotland under the new system, said that he had always been treated with courtesy. He was not aware of any such occurrence having taken place as that which Mr. Moore had stated. Students might be a little rough and sometimes rather disposed to be rowdy, but he was not aware of their having resorted to such extremely ungentlemanly and unfair means as Mr. Moore had mentioned. He should like to know the time and place of the occurrence.

Professor WILLIAMS said he could safely say that such a thing had never occurred in Edinburgh.

Mr. COWIE said he had been examiner for twenty-four or twenty-five years, and he could honestly say that a fairer and more honest set of men he never met in his life as his co-examiners. The examiners made every allowance they possibly could for nervousness, and everything, in fact, except inefficiency, and he thought Mr. Moore must have been misinformed as to what he had stated.

Mr. Wallis's motion was then put to the meeting and carried unanimously.

The scrutineers then presented their report, which showed the following names, with the number of votes for each :

Professor Axe ...	 455	Mr. Flanigan ...	... 221
Mr. Robertson ...	... 444	„ Talbot ...	... 213
„ Gowing ...	... 417	„ Broad ...	. . 210
„ Simonds ...	... 375	„ Wragg ...	... 201
„ Whittle ...	... 348	„ Santy ...	... 194
„ Anderton ...	... 300	„ Cox ...	... 192
„ Dray ...	... 257	„ Owles ...	... 121
„ Balls ...	... 248	„ Moon ...	... 84
„ Cartwright ...	... 245	„ G. Williams...	... 41

The first six were therefore declared duly elected—viz., Professor Axe, Messrs. Robertson, Gowing, Professor Simonds, Messrs. Whittle and Anderton.

Messrs. Spooner, Avis, Broad, junr., Peacock, Dixson, and Sowerby were the scrutineers.

On the motion of Professor WILLIAMS, seconded by Mr. GIBBINGS, a vote of thanks was accorded to the President, and the proceedings terminated.

THE ANNUAL DINNER.

The annual dinner of the Royal College of Veterinary Surgeons took place at the Freemasons' Tavern, on the evening of the annual meeting, and was largely attended by metropolitan and provincial practitioners. Major-General Sir F. Fitzwygram, Bart., presided, and among the guests present were General Shute, M.P. ; Colonel Kingscote, C.B., M.P. ; Colonel Ewart, 2nd Life Guards ; Captain Logan Home, M.P., Royal Horse Guards ; Mr. Newdegate M.P., Professor Lyford, Montreal Veterinary College, Finlay Dun, Dr. Burdon-Sanderson, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS' ELECTIONS.

AT the meeting of Council of the Royal College of Veterinary Surgeons, held on May 27th, Professor Williams, New Edinburgh Veterinary College, was elected President ; and Professors Mc Call and Walley, with Messrs. Cartwright, Williams, Moon and Dray, as Vice-Presidents. Mr. Dray was elected Treasurer, and Mr. Coates Registrar and Secretary.

A cordial vote of thanks was given to Major-General Sir F. Fitzwygram, Bart., the retiring President, for his services during the three years he held office.

CENTRAL VETERINARY MEDICAL SOCIETY.

AN ordinary meeting was held at Red Lion Square on Thursday evening, March 6th, 1879, the President, Professor AXE, in the chair, when the discussion of his paper on " Diphtheria in relation to Garget " was renewed.

Mr. FLEMING, adverting to Mr. Power's report, a copy of which was before him, said the attempt to trace the relationship between the human and the bovine malady was very feeble. He knew that the milk-sellers in Kilburn had been severe losers by that report, and it was not unlikely legal proceed-

ings would be taken against the author, or the Pathological Society. Personally he was astonished that Mr. Power should have tried to establish this relationship. Quite recently, H. Dieckerhoff in Germany, had given an account of an infectious form of Mammitis; and an excellent Veterinary pathologist had published a remarkable account of an outbreak of Diphtheria in calves: how it arose was, however, not stated, but it was considered infectious, an attendant being affected with similar symptoms. He doubted if anything similar to Diphtheria affected the cow's udder. He inquired of Mr. Banham if the Committee of the Pathological Society had made any investigation of Garget—in answer thereto nothing had yet been heard of it.

The PRESIDENT said that as soon as he heard of the report, he put himself in communication with the neighbourhood indicated, visiting not only Muswell Hill Farm, but also the Kilburn places; also witnessed the manner of milking and the disposal of the milk; also saw the Veterinary Surgeon attending there, and was assured there was no Garget or any specific disease prevalent for the first six months, with which Mr. Power's report first dealt. The investigation seemed partial, as a list of customers had been furnished the doctor by the owner of the dairies, and this had been strictly followed up; this had not been extended to other dairies: such a house-to-house inquiry would no doubt swell the number of throat affections, which might not otherwise come under medical observation. It appeared from a monthly report of St. Marylebone, furnished him by Mr. Moore, that Dr. Whitmore gave a tolerably full account of the matter.

Mr. FLEMING said it was the fashion to consider the origin of many disorders to reside in the milk, apparently for want of some better explanation; and Mr. Power finding everything else fail fell back on the milk supposition. Looking at the dimensions of the milk trade and its importance in households, he thought medical men should be very careful in that respect, owing to the alarm occasioned. In Kilburn many now would not use milk, and much injury had been occasioned the dairymen. It appeared to be the opinion of the medical men that the disease was really due to the sewers, which were now being opened out and repaired.

Mr. PRICE exhibited a portion of the liver and lungs of a horse—observing they were from a valuable cart-mare five years old, healthy up to the time of injuring a fetlock with a shoe. It festered, accompanied with a deal of inflammation and sympathetic irritation, finally mortifying: death ensuing in five days, a *post-mortem* examination revealed the state of lungs shown. He queried whether there was any such disease before the accident; there were no lung disease symptoms shown then; the thermometer registered 105 deg., and there was a great swelling of the limb.—The President said the lesions were essentially pyæmic, and there were evidences of thrombic affection, and by the plugging of the vessels he deemed it phlebitis affecting the veins of the injured limb, and leading on to blood infection.—Mr. Fleming said with regard to the skin affection lately under discussion, he might state that some three weeks back he received some scab crusts from a case, and immediately got a four-year old horse, and shaving a portion of skin from the side, blistered the part mildly, and applied the crusts mixed with water after the chief action had passed off. Three days later there was a slight exudation, which soon went off. That morning, passing through the stable, he found an eruption on and around the part; he should watch the animal for a few days.—The President said this was interesting. The Fellows would remember in an inoculated case he had detailed, the affection appeared long after the experiment.

Messrs. John Gerrard, of Romford, and George A. Banham, of the Brown Institution, were ballotted for and duly elected, and the meeting adjourned. Present, twelve Fellows and four visitors.

At another meeting held May 1st, in the absence of the president, Mr. Fleming in the chair, the Secretary related a case of a Blenheim spaniel which, on the Thursday previous, while playing with a ball of thread, swallowed a needle and some eight inches of thread, the housekeeper having accidentally dropped it, and looking for it noticed the end of the thread in the dog's mouth, but he bolted it while catching him; Friday and Saturday he continually vomited, and on Sunday strained violently, howling as if in pain, and was sent to him; he gave an enema, and later on drew the thread and needle exhibited from the anus. How it could travel the whole length of intestine he could not understand, and was unaware of any record of a similar incident. He had several needles in his possession taken from the roof of the mouth and throats of dogs and cats.—Mr. Sheather remembered a case (when a schoolboy) of a boy swallowing a puffing dart (*i.e.*, a long needle with a piece of fluff in the eye) by accidentally taking a deep breath which drew it down into the pharynx and stomach; he was ordered to lie on a sofa and eat dry crusts, which was observed for forty-eight hours, when the needle passed away with the pieces without inconvenience; this needle was some $2\frac{3}{4}$ inches in length; Mr. Rowe's was $1\frac{1}{2}$ inches.—The Chairman thought these cases curious, from the fact that it was common for mad people to swallow pins and needles which rarely passed the rectum. In the case of a little girl he had lately heard of, who was addicted to swallowing needles, they passed out at all parts of her body save the rectum, one being from the sole of the foot; in the above cases he thought they became attached to some hard food which assisted them in their passage. A horse in his regiment was under observation now, being supposed to have swallowed one of the iron logs to which the head-collar chain is attached; this log is round shaped, and of nearly 2lbs. weight. The horse had indicated uneasiness by putting his nose in the chest and throwing it in the air, with convulsions passing along the body; he was then thought to be colicky and treated accordingly; but the log being reported as missing, it was doubtless choking at the time, now two months since. Time would show the truth or fallacy of the theory.—Mr. Hancock then gave in a horse-shoe dug up at Ilford Cemetery, 18 feet deep, which he will send to the museum.

Mr. J. H. Steel then read a very exhaustive paper on Bacteria, in relation to Biology* (sent for publication), which occupied the remainder of the evening, and the consideration of which was adjourned to the next meeting.

Mr. John Atkinson, of London, was proposed as a Fellow, and the meeting adjourned. Present ten Fellows and two visitors.

JAMES ROWE, *Hon. Sec.*

NORTH OF IRELAND VETERINARY MEDICAL SOCIETY.

A MEETING of the veterinary surgeons of Belfast and neighbourhood was held in the Thistle Hotel, Belfast, on September 19th, 1878. The meeting was convened for the purpose of forming and establishing a Veterinary Medical Society for the North of Ireland. Mr. J. B. Dunlop, M.R.C.V.S., having been voted to the chair, Mr. George Kidney briefly stated the origin of the movement, which, he said, was the result of several conversations he had with Mr. Mathews, in which they had mutually regretted the want of such a society, which he believed had not—at least, permanently—existed in Ireland, and to the want of which might probably, in some degree, be attributed both the apparent unimportance of the profession in the public estimation, and also the disunited condition of its members in this country.

* Illustrated with diagrams and microscope slides.

In the hope, therefore, of forming such a society, they had conjointly forwarded circulars on the subject to all members within reasonable distance. Courteous and favourable replies had been received from a large number, and the present preliminary meeting was the result. The office-bearers were then elected as follows :—President, Mr. J. B. Dunlop ; vice-presidents, Messrs. Doris, Cookstown, and Kidney, Belfast ; treasurer, Mr. Kernohan, Ballymena ; secretary, Mr. Matthews, Belfast.

A committee of four was then appointed to draw up a code of rules for the guidance of members and the regulation of the Society's meetings.

Professor WALLEY, Principal, Royal (Dick's) Veterinary College, Edinburgh, who had kindly arranged to attend, then addressed the meeting upon the subject of Veterinary Medical Societies, and the advantages, social, professional, and political, which in many instances had been derived from them.

The Professor then read an interesting paper on the nature and pathology of Contagious Pleuro-pneumonia.

The second meeting of the Society was held on December 19th, 1878, at the Thistle Hotel, Belfast, the following members being present :—The President, Mr. J. B. Dunlop ; Messrs. Doris, Kidney, Kernohan, Bryan, Simcocks, Giffen, and the Secretary. Mr. Cooke, M.R.C.V.S., also attended as a visitor. After the business of the meeting, the President read his inaugural address, in which he ably discussed and advocated the objects of the Society, which he sincerely trusted each member would assist, as far as possible, in realizing. Contagious diseases, in connection with their origin, nature, and various peculiarities, formed the remaining portion of the President's address, which was fully discussed.

On March 27th the third quarterly meeting of the Society was held as usual in the Thistle Hotel, the following members being present :—Mr. J. B. Dunlop, president ; Messrs. Kidney, Kernohan, Bryan, Bradshaw, Giffen, Drummond, and the Secretary. Mr. Cooke, M.R.C.V.S., and Mr. Drummond also attended as visitors. Apologies for non-attendance were received from Messrs. Simcocks, Drogheda, and Doris, Cookstown, and several other members who were unable to be present. After the business of the meeting was concluded, when six new members were enrolled, Mr. Dunlop exhibited a most wonderful and interesting specimen of malformation in a fœtal calf, the whole of the internal organs being formed and developed externally ; in fact, the whole of the calf, with the exception of the head and a portion of the neck being completely turned, as it were, inside out. Of course this strange condition of the fœtus involved the death of the mother. Mr. Kidney afterwards read a very good paper on the subject of "Unsoundness in Horses," which gave rise to a long and very useful discussion. There is every reason to hope and believe that the above Society will be a great success, and of very considerable benefit to the profession in the north and east of Ireland.

ONTARIO VETERINARY COLLEGE.

THE spring examination of this Institution took place on Wednesday and Thursday, April 2nd and 3rd.

The following gentlemen constituted the Board of Examiners :—Mr. Cowan, Galt : Mr. Coleman, Ottawa ; Mr. Cæsar, Port Hope ; Mr. Duncan, Goderich ; Charles McNaught, Seaforth ; Mr. Wilson, London ; and Dr. Thorburn. The Board were assisted by several other gentlemen, graduates of the College, who were present as visitors.

The annual distribution of prizes and diplomas to the successful students at the examinations of the Ontario Veterinary College took place on April 4th. Among those present were his Honour the Lieut.-Governor, Hon.

Mr. Wood, Hon. Mr. Crooks, Hon. Mr. Hardy, Professor Buckland, Dr. Andrew Smith, the Principal, Dr. Thorburn, and Captain Grant, A.D.C.

The visitors having been shown over the college by the Principal, were conducted to the museum, where the students had assembled.

Professor BUCKLAND then addressed the students. He gave a sketch of the history of the College since the first inception of the scheme, which had been suggested by the Veterinary College in Edinburgh. Dr. Smith was in the first instance sent out from Edinburgh, and gave a course of lectures to the students attending the speaker's class in University College. Dr. Smith then purchased the present property in Temperance Street, and eventually erected the convenient building, now the Ontario Veterinary College; the result of the experiment had been highly successful, and the institution was not surpassed by any of its kind on this continent. The speaker then paid a tribute to the ability and trustworthiness of the Principal, and said that as one result of the existence of the College, the veterinary profession was being introduced in every part of Canada. The Board of Agriculture and the Ontario Government had both given pecuniary encouragement to the institution, and by the Government aid the museum and library had been formed, and all that was wanted to complete the success of the College was a little more extraneous aid than it now received. The number of students, which was half a dozen at the outset, had now increased to sixty-six.

The SECRETARY having read the names of those who had gained diplomas, his Honour distributed the prizes.

His Honour then said that it would be useless for him to address them at length on a subject with which he had not an intimate acquaintance. He might say that, so far as his own influence extended, he would support his Cabinet in any reasonable proposal to give assistance to these most useful institutions, which played so important a part in matters connected with the development of our agricultural system. (Applause.)

Hon. Mr. WOOD regretted that an engagement prevented his addressing the students.

Hon. Mr. CROOKS expressed his sense of the admirable condition in which he found the College, and of the importance to the country of the work it was performing. His Honour, he was glad to say, had always taken a deep interest in it, and would, doubtless, continue to do so. On a proper knowledge of agriculture and its kindred subjects depended the prosperity of the country, and it was owing to the persevering labours of such men as their Principal and Professor Buckland that so much of the general advance of this knowledge was due. He believed the true interests of Ontario consisted in the improvement of the stock of the farmers, and therefore the importance of such an institution as theirs, which had to deal with what was of so much value to the farmer, could not be over-estimated. His Honour's promise would have a material signification whenever it became the duty of the Government to consider the claims of the College. (Applause.) Personally, he (Mr. Crooks) would have pleasure in advocating its claims in the Province. He was a friend of the Principal, for whom he had a high respect—both on account of his capabilities and his conscientious discharge of his duties. (Applause.)

Professor SMITH, on behalf of the faculty and students of the College, thanked his Honour and members of the Government for the interest they had evinced in the College by their presence on that occasion.

The proceedings then terminated.

The following is the prize and honour list:—

Graduates—D. W. Ackerill, Belleville, Ont.; J. Armstrong, Bayfield, Ont.; D. Bateman, Port Perry, Ont.; F. W. Bartram, Ovid, Mich., U.S.; E. Blackwell, London, Ont.; H. Butcher, Omagh, Ont.; K. H.

Cleaver, Allentown, Penn., U.S.; G. W. Copis, Madisonburg, Ohio, U.S.; S. J. Foelker, Allentown, Penn., U.S.; T. Fisher, Georgetown, Ont.; O. French, East Bloomfield. N.Y.; J. Frink, St. John's, N.B., T. Foster, Belleville, Ont.; J. E. Gemmel, Toronto, Ont.; N. Grant, Sombra, Ont.; C. Green, Richmond, Ill., U.S.; F. C. Grenside, Guelph, Ont.; J. Hammil, Keenansville, Ont.; J. Heckenberger, Catasaugua, Penn.; J. Massie, Smith's Falls, Ont.; C. Matthews, Brougham, Ont.; F. W. Matthews, Toronto; F. McDonagh, Carlow, Ont.; M. McNally, Houston, Texas, U.S.; J. H. Miller, Wadsworth, Ohio, U.S.; E. C. Oliver, Claude, Ont.; J. H. Milnes, Cedar Rapids, Mich., U.S.; E. Prentice, Chicago, Ill., U.S.; W. Rose, Durham, Ont.; J. G. Rutherford, Edinburgh, Scotland; J. Stephens, Collingwood, Ont.; R. White, Whitby, Ont.

Primary Examination—G. F. Lount, Toronto, Ont.; W. J. McCormack, London, Ont.; W. Powers, Port Hope, Ont.

General Examinations—Gold Medal given by the Ontario Medical Veterinary Association to the student passing the best general examination, J. G. Rutherford. Honours—First Class, E. Prentice, S. Foelker, F. Grenside; Second Class, J. Frink, T. Foster, O. French, M. McNally, E. C. Oliver.

Anatomy—Silver medal, Foelker. Honours—Grenside, Gemmel, Prentice, Rutherford.

Entozoa—Prize, Prentice. Honours—Foelker, Gemmel.

Chemistry—Seniors—First (*æq.*), Gemmel, J. H. Milnes. Honours—Grenside, W. Rose, Prentice.

Horse Pathology—Seniors—Silver medal, Prentice. Honours—Foelker, French, Grenside, Rutherford.

Cattle Pathology—Seniors—Prize, Grenside. Honours—Cleaver, French, Foelker, Gemmel, Prentice, Rutherford.

Materia Medica—Seniors—Prize, Cleaver. Honours—Gemmel, Oliver, Massie.

Breeding and Management of Farm Animals—J. G. Rutherford, $26 in books given by the Commissioner of Agriculture. F. C. Grenside, Second Prize, $15 in books, given by the Agricultural and Arts Association. J. E. Gemmel, Third prize, $10 in books, given by the Association.

Juniors—Anatomy—Silver medal, C. Smith. Prize, U. Springer. Honours—Brerton, Burt, Coulson, Loughman, Whiteside. Chemistry—Honours—Dunphy and Smith (equal), Brenton. Pathology—Honours—Springer and Smith (equal).

The number of students attending during the Session of 1878-79, was seventy-six.

ONTARIO VETERINARY MEDICAL ASSOCIATION.

A SPECIAL meeting of the Ontario Veterinary Medical Association was held in the Veterinary College, Toronto, on April 3rd. The meeting was well attended by members from all parts of the province.

Prof. SMITH, President of the Association, opened the meeting, and read the Act of Incorporation of the Association just passed in the Provincial Legislature, on which an animated discussion ensued. The Act, although not all that was wished, appeared to give pretty general satisfaction. The clause in it requiring all qualified veterinary surgeons to register was especially commended. There is also a clause making it a penal offence for any person to assume the title of veterinary surgeon unless he is a graduate of some recognized Veterinary College, and the recognized colleges both of

Europe and America are specified. The Secretary of the Association, Mr. Sweetapple, V.S., of Brooklyn, was appointed Registrar.

It was also moved by Mr. DUNCAN, seconded by Mr. CÆSAR, and carried, "That the Ontario Veterinary Medical Association, in view of the vast stock interests both of the United States and Canada, and the great danger to those interests in both countries of allowing contagious disease to advance without proper measures being taken to check such disease, urge upon the Governments respectively of the United States and Canada to appoint a joint Veterinary Commission to examine into and report upon the steps necessary to be taken to prevent the spread of contagious diseases."

Mr. Coleman, V.S., of Ottawa, read a very interesting paper on "Diagnosis." He dwelt strongly on the great advantage to the profession at the present day of the improved instruments now in use for the study of diseases. He also spoke very highly of that able work, Da Costa's "Medical Diagnosis," and strongly advised those practitioners who had not seen it to add it to their library, and closed his remarks by quoting the pithy Americanism, "be sure you are right, then go ahead."

After some further routine business the meeting adjourned to the next annual meeting.

COLUMBIA VETERINARY COLLEGE, NEW YORK.

THE first annual commencement of the Veterinary College of the City of New York took place lately in Chickering Hall. There was a large audience, a major portion of whom were ladies, who manifested great interest in the proceedings. The platform was beautifully decorated with floral designs and exotic plants. Prof. E. C. Spitzka, M.D., read the report of the Faculty, mentioning among other things the marked success of the College. It was anticipated that the class of 1879-80 would exceed sixty in number. An address by the Hon. D. D. T. Moore was followed by the presenting of certificates to the following juniors: John A. McLaughlin, New Jersey; John Lindsay, Long Island; John Duane, New York; Alexander McKenzie, Connecticut; Nathaniel Foote Thompson, New York; and Allen B. Marsh, Connecticut.

Owing to the unavoidable absence of Dr. Hadden the documents were presented by the Dean of the Faculty, Prof. Bates, who also conferred the senior degree and diplomas on the following members of the graduating class: James Hamill, New York; Charles A. Myer, New York; George H. Burns, Brooklyn; Frank Walton, New York; Frederick Wilson, Brooklyn; J. Frederick Mustoe, Brooklyn; John Cuff, New York; David W. Cochran, New York; Samuel H. Darling, New York; and H. E. Earl, New York.

The next exercise in order was the award of prizes, which was awaited with undisguised anxiety by the competitors and their friends, as the names of the successful parties were kept a profound secret until they were summoned on to the platform to receive their reward from the hands of Prof. Thomas H. Hawkins, M.D. Charles A. Myer, N.Y., was the winner of the J. A. Going gold medal. The Faculty prize of a silver medal for general proficiency was carried off by N. F. Thompson, N.Y., Junior Class. Charles A. Myer was also the successful competitor for the anatomy prize, presented by Prof. Spitzka, consisting of two vols., "Equine Pathology."

Mr. George H. Burns, Brooklyn, was awarded the fourth and fifth prizes, consisting of a case of surgical instruments, and a set of books—Gross on "Surgery." The valedictory address was delivered by James Hamill, D.V.S. of the graduating class. An address to the graduates, by Hon. Judge John R. Brady, terminated the evening's proceedings.

MEETING OF VETERINARY SURGEONS TO CONSIDER THE QUESTION OF FEES.

A MEETING of veterinary surgeons was held on Tuesday, May 6th, at the Plough Tavern, Museum Street, Oxford Street, W.C., to consider the question of fees pertaining to veterinary practice, especially with regard to the system of competition maintained at the Royal Veterinary College.

Mr. T. Moore having read the notice convening the meeting, E. Coleman, Esq., was called to the chair, and after a short conversation of no particular interest, it was proposed by Mr. J. Rowe, seconded by Mr. A Gaskin, and carried unanimously, that the meeting be adjourned till the evening (9 o'clock) of the 5th June next.

ROYAL AGRICULTURAL SOCIETY.

AT the Council meeting held on May 7th, Colonel KINGSCOTE, C.B., M.P. (chairman), reported the receipt of reports from the Royal Veterinary College on investigations made, and the committee recommended that the members be applied to for the expenses incurred. The committee having received and considered two applications from members of the Society asking for remission of fees for veterinary inspection, were of opinion that the funds of the Society should not be called upon to defray the same.

Colonel KINGSCOTE supplemented this report by stating that at the annual dinner of the Royal College of Veterinary Surgeons on Monday last, great satisfaction was expressed by the head of that College, as well as by the heads of the Royal Veterinary College and the Edinburgh Veterinary College, that the Royal Agricultural Society had resolved to offer prizes to encourage students in the study of cattle pathology. A great wish was expressed by Principal Williams, of the Edinburgh College, that the Society should help the students there ; but as he (Colonel Kingscote) ventured to suggest on that occasion, this would be treading on the toes of the Highland and Agricultural Society. However, as that Society was now altering its arrangements with regard to the Veterinary schools, he begged to move "that it be referred to the Veterinary Committee to consider whether prizes, open to all the Veterinary schools, can be offered in conjunction with the Highland Society."

The Earl of RAVENSWORTH pointed out that if the prize scheme were extended to Edinburgh, it would only be just to extend it to Dublin.

Colonel KINGSCOTE replied that there is no Veterinary College at Dublin.

Mr. DENT pointed out that the Society should enter into communication with the Highland and the Irish Societies, with a view of ascertaining whether the three bodies could combine to give prizes to students of cattle pathology in any portion of the United Kingdom. At the same time he pointed out that the providing of facilities for giving these students a practical knowledge of cattle diseases was a matter of greater importance than the offer of prizes.

Earl SPENCER agreed as to the advisability of extending to Ireland the advantages extended to England and Scotland. It was true that Ireland possessed no Veterinary College, although one was very much needed there, but probably students would present themselves from the Agricultural College at Glasnevin to compete for the prizes in question.

Colonel KINGSCOTE said that the subject to which Mr. Dent had alluded had been, and was still being, very much canvassed both by the Royal College of Veterinary Surgeons and the Royal Veterinary College. It was

a most difficult question, for although the Royal Veterinary College were prepared to take diseased animals free of charge, in practice this offer was not accepted. The matter would not be lost sight of, but there were immense difficulties in the way.

The report of the committee was then adopted.

PRESENTATION OF A TESTIMONIAL TO GEORGE FLEMING, ESQ., F.R.C.V.S., 2ND LIFE GUARDS, AT THE ANNUAL DINNER OF THE PROFESSION, 1879.

THE presentation of the Fleming "Testimonial" took place at the annual dinner of the Royal College of Veterinary Surgeons, and this duty was allotted to Mr. Greaves, than whom—from his knowledge of Mr. Fleming and his labours, as well as his acquaintance with the history of Veterinary medicine in this country for many years—no one could be more competent. In making the presentation, Mr. Greaves said :

Mr. Chairman, Fellows, and Members of my Profession, I rise to perform the very pleasing duty of presenting a testimonial to a worthy and honoured member of our profession. I feel it to be a distinguished honour to be permitted to do this, and to convey with this testimonial the verbal expression of a grateful profession. Being the representative and exponent of the wishes and feelings of my Veterinary brethren, I find some difficulty in expressing in appropriate language their views and sentiments towards the person whom it is their delight to honour. The labours of Mr. George Fleming in the field of Veterinary literature are beyond our praise. Mr. Fleming is a man who has essentially risen from the ranks by his own indomitable industry, provident habits, and ability ; he has raised himself to the rank of one of the first scientific veterinary surgeons of the day. We are all proud of him. He is a star in the profession to which he belongs. You will see this is no flattery when I tell you he has educated himself to speak, write, or read six or seven languages. He is the author of several classical works, which are standard works not only for veterinarians, but also for medical men all over the world. His work on "Obstetrics," on "Veterinary Sanitary Science and Police," on "Rabies and Hydrophobia," on "Horse-shoes and Horse-shoeing," and on "Animal Plagues," these alone necessitated reading and translating in eight or nine languages. There is also his translation from the French of Chauveau's "Comparative Anatomy of the Domesticated Animals"—one of the best and most complete of all the foreign text-books—and various valuable articles too numerous to mention. We feel it is therefore our bounden duty to return him some recognition for services rendered. I feel constrained to admit that, although this testimonial emanates from Great Britain, Australia, Canada, the United States of America, and India, it but feebly expresses the estimation in which he is held by the members of the Royal College of Veterinary Surgeons. We find in him a man who has long laboured assiduously, honestly, and earnestly in our profession ; his mind has risen to a large and just conception of life, and understands in its true sense that life is more than meat. His works will live after him ; he has proved himself a man gifted with talents of no mean order, and these he has exercised for our good in the advancement of our common profession. He seems to have thrown his whole soul and his life into the struggle ; and the poet says—

> "Life is real ! life is earnest !
> And the grave is not its goal ;
> Dust thou art, to dust returnest,
> Was not spoken of the soul."

We are taught that the emancipated soul will rise to a h gher, brighter, and better world, with remembrances of kindness rendered here. To most of us this life is a chequered scene : even the material elements of this testimonial may, nay must perish, but the ethereal elements of the friendship which called it forth are capable of everlasting duration ; and the expressions of kindness with which its presentation is being accompanied will, we hope, afford solace in life's latest hour, and possibly freshen in eternity. Mr. Fleming's active mind and enterprising disposition have rendered him useful in many ways, thus greatly increasing our obligations to him. He possesses every attribute of a humane English gentleman. The strong characteristic of Mr. Fleming's nature seems to be intense earnestness, blended with great gentleness and kindness towards all animal creation. We are told that—

> " The heart is hard in nature, and unfit
> For human fellowship, as being void
> Of sympathy, and therefore dead alike
> To love and friendship both, that is not pleased
> With sight of animals enjoying life,
> Nor feels their happiness augment his own."

His uncompromising antagonism to vivisection and cruelty to animals in every form, proves the noble qualities of his mind, and shows that he

> " Casts round the world an equal eye,
> And feels for all that live."

As an Examiner in our Court of Examiners, Mr. Fleming has earned for himself the high esteem of the Council and the students. As the proprietor and editor of that popular monthly publication, THE VETERINARY JOURNAL, diffusing so much useful and scientific matter—by this and other almost Herculean tasks he has endeared himself to his profession.

In conclusion, I beg to hand you this beautiful timepiece with its inscription, and this purse of gold—a purse containing 300 sovereigns—out of the bounty of 284 members of my profession. We most sincerely wish you many years of health and life to continue your noble labour; and whenever in the ordinary course of nature your useful and valuable career draws to a close—when the silver cord is loosened, when everything lovely that has been near and dear to you in this beautiful world fades from your vision, and the grim messenger approaches his prey—even in that dread hour you will not be forgotten nor forsaken by your Veterinary brethren, for their prayer will then be that your end may be peace.

To this address Mr. Fleming replied in a most feeling and appropriate speech. In the course of his remarks he alluded to the earnest desire which had always animated him for the advancement of Veterinary science in this country, and that he had sought to identifiy himself with every measure calculated to promote its progress. His labours in this direction, which had been unremitting and unwearied for nearly a quarter of a century, were, he assured those present, entirely devoid of selfish aims or intentions ; for the history of the profession in this country had shown that there was nothing to hope for in the way of promotion or preferment by such labours as he had undertaken or such tasks as he had accomplished. He had done his utmost to raise Veterinary medicine to the position it should occupy, and to contribute to the scientific knowledge, as well as the material prosperity, of the members of that profession to which he was so devotedly attached. He had also neglected no opportunity of claiming for Veterinary science that acknowledgment from human medicine, agriculture, sanitary science, humanity, and the public, to which it is so well entitled. Aiding and rejoicing in the success of everything calculated to enhance the value of this science,

the great and unexpected testimonial of the esteem in which his efforts had been held by his brethren, and of which he was the recipient that night, would urge him to continue his efforts with unabated earnestness and zeal; and until the chimes of the beautiful clock with which he was now presented became inaudible to him in the stillness and long, dark night of eternity, he would ever cherish their regard and esteem as the dearest treasures he could possess. None could be more competent judges of the value of his labours, and to win their recognition was surely sufficient to satisfy the highest ambition ever possessed by one of their number. To gain the applause of our fellow-men was a laudable and worthy ambition; and when it was gained by fair, honest, and independent means, without recourse to meretricious or ignoble stratagems, then he felt the applause was deserved, and could be received with fervent gratitude and unalloyed pride. Thanking the members of his profession most earnestly for their expressions of kindness towards himself, and for their gift, and more especially Mr. Greaves for the feeling way in which he had embodied their sentiments, he desired to assure those gentlemen who had particularly exerted themselves in this movement—the secretary, treasurer, and others—of his grateful appreciation of their kindness.

THE "FLEMING" TESTIMONIAL.

IN concluding my trust for the above I beg to submit a full list of subscribers thereto, and of the attendant expenses; and beg that space will be accorded in the VETERINARY JOURNAL for the same.

JAMES ROWE, Jun., *Honorary Secretary.*

Cr.

	£	s.	d.
Printing, postage-stamps, and post-cards	11	7	4
Advertisements	11	4	0
Waiter attendance	1	6	0
Commission on country cheques	0	1	8
Testimonial clock	48	10	0
Testimonial purse	300	0	0
Balance in hand, remitted	0	5	0
	£372	14	0

Audited and found correct by Messrs H. T. and T. G. Batt.
May 10th, 1879.

	£	s.	d.		£	s.	d.		£	s.	d.
Allmann, J. D.	1	1	0	Balls & Son ...	2	2	0	Broad, A. ...	1	1	0
Arnold & Sons	5	5	0	Banham, G. A.	0	10	0	Broad, J. C. ..	1	1	0
Anderton, T. W.	0	10	6	Barber, J. S. ...	1	1	0	Broad, T. D. ...	1	1	0
Atkinson ...	1	1	0	Barford, J. D.	0	10	0	Bromley, W. ..	1	1	0
Aubrey, T. ...	0	10	6	Brown, N. ...	0	10	6	Broughton, W.	0	10	6
Auger, T. E. ...	0	10	6	Batt & Son ...	3	3	0	Brown, Prof. ...	1	1	0
Aulton, A. ...	1	1	0	Beard, H. ...	0	10	6	Boyer	1	1	0
Axe, J. M. ..	1	1	0	Beddard, E. ...	1	1	0	Burrell, jun., ...	1	1	0
Axe, Prof. ...	1	1	0	Bell, J.	1	1	0	Byer...	1	1	0
Baird, A. ...	1	1	0	Bentley, W. ...	1	1	0	Catlow, J. W....	1	1	0
Baird, C. ...	1	1	0	Blakeway, F. ...	1	1	0	Carless & Son...	1	1	0
Ballière, Tindall and Cox ...	2	2	0	Bowles	1	1	0	Carless, G. ...	1	1	0
Brown, Miss ...	0	10	0	Boyd	4	0	0	Catt, A. E. ...	1	1	0
Bale. J.	0	10	6	Bradshaw, H....	0	10	0	Carter, J. ...	0	10	6
				Briggs, F. ...	1	1	0	Cartledge, B. ...	1	1	0

	£	s.	d.
Cartwright&Son	2	2	0
Cartwright,H.J.	1	1	0
Cartwright, R.	1	1	0
Cave, G.	1	1	0
Cave, T.	0	10	6
Challinor, A. ...	1	1	0
Challinor, C. ...	1	1	0
Chesterman, T.	1	1	0
Clark, W. ...	1	1	0
Clarke, J. A. ...	1	1	0
Coates, W. H...	1	1	0
Colam, J., R.S.P.C.A.	1	1	0
Coleman, J. B...	0	10	0
Collins, J. ...	2	2	0
Cooper, S. J....	0	10	6
Cowie, J. ...	2	0	0
Cox, Roalfe ...	5	5	0
Cuthbert, J. ...	1	1	0
Dacre, W. ...	1	1	0
Daniell, A. B....	1	1	0
Darwell&Son...	1	1	0
Davy, E. M. ...	1	1	0
Dewar, J. R. ...	1	1	0
Dickie	1	0	0
Dobie, W. ...	1	1	0
Duguid, Prof....	1	1	0
Dunlop. J. B....	1	1	0
Elam, C. W. ...	1	1	0
Evans, G., M.D.	1	1	0
Faulkner, E. ...	3	3	0
Faulkner, J. S.	1	1	0
Fergusson, H.	1	1	0
Ferris	0	10	6
Field, W.... ...	1	1	0
Findlay, J. ...	1	1	0
———	0	11	6
Fitz - Wygram, Sir F.	1	1	0
Forbes, C. (Australia) ...	1	1	0
Fraser, J.... ...	1	0	0
Freeman, Jas....	1	1	0
Freeman, John	0	10	6
Freeman,Joseph	0	10	6
Frost, R. F. ...	2	2	0
Gardiner, B. ...	1	1	0
Gerrard, J. ...	1	1	0
Gibbings, H. D.	0	10	6
Gibbs, J.... ...	0	12	0
Gibton, R. ...	0	10	0
Gloag, J.... ...	1	1	0
Goulé, H. ...	0	10	6
Gowing & Son	2	2	0
Gray, G.	1	1	0
Greaves, T. ...	12	12	0
Gresswell, C. ...		11	0
Groves, C. ...	0	5	0
Gudgin, T. ...	1	1	0
Gunn, A.... ...	1	1	0
Gunn	0	10	6
Hamilton,— M.R.C.S. ...	1	1	0
Hammond ...	0	11	6
Harpley, — ...	1	1	0
Hewlett & Son	2	2	0
Heyes, G. ...	1	1	0
Hill, J. W. ...	5	5	0
Hills, O. J. ...	3	3	0
Hinge, D. ...	1	1	0
Hodgkins, J. ...	2	2	0
Hodgkinson, E.	0	10	6
Hopkin, F. ...	6	6	0
Houston, W. ...	0	10	6
Hubbick, C. ...	1	1	0
Hunting, D. ...	0	10	6
Hunting, W. ...	1	1	0
Hutcheon, D....	1	1	0
Irving, J.... ...	1	1	0
James, I. C. ...	1	0	0
Jarvis, F. ...	2	2	0
Jeeves, T. F. ...	1	1	0
Johnston, W. ...	1	1	0
Jones, A.... ...	1	1	0
Kennedy, W. ...	1	1	0
Kerr, M. ...	1	0	0
Kettle, B. ...	1	0	0
Kidney, G. ...	1	1	0
Kidd, H.... ...	0	10	6
Killick, J. A. ...	2	0	0
King...	1	1	0
Knight, R. ...	1	1	0
Knott, S. ...	1	1	0
Lawson, Mrs. ...	5	5	0
Lawson, A. "In Memoriam."	2	2	0
Lambert, J. D.	3	0	0
Lambert, T. D.	5	0	0
Lawson, A. ...	1	1	0
Lawson, J. ...	1	1	0
Lawson, W. C.	1	1	0
Leather & Sons	3	3	0
Lewis	0	5	0
Lepper, G. A....	1	1	0
Locke, S.... ...	1	1	0
Longhurst ...	1	1	0
Longhurst, S....	1	1	0
Longhurst, W.	0	10	6
Low, F.	1	1	0
Lupton, J. I. ...	2	2	0
MacCallum ...	1	1	0
MacGillivray ...	1	1	0
Mackay, Sellars and Co. ...	3	3	0
Markham, J. ...	1	1	0
Marshall, F. J.	1	1	0
Martin, J. B. ...	2	2	0
Masters, W. ...	1	0	0
Matthews, I. ...	1	1	0
Mayer, Prof. ...	1	1	0
McCall, Prof....	5	0	0
McEachran, Prof.	5	0	0
McFadyean, Prof.	1	1	0
McGavin, J. ...	0	10	0
McGill, Prof. ...	1	1	0
Mence, M. ...	1	1	0
Menzies, D. ...	0	10	6
Menzies, J. S....	0	10	6
Merrick, J. ...	1	1	0
Meyrick, J. ...	1	1	0
Mitchell, A. ...	1	1	0
Mitchell, R. ...	0	10	6
Mitchell, G. ...	3	3	0
Mole, W. ...	0	10	6
Moir, C.	1	1	0
Moon, J.	1	1	0
Moore, J. W. T.	1	1	0
Moore, T. ...	1	1	0
Moreton, R. ...	1	0	0
Morgan, G. ...	1	1	0
Mulvey, W. ...	1	1	0
Murphy, M. ...	1	1	0
Naylor, W. E.	1	1	0
Nuttall, E. ...	1	1	0
Olver, H. ...	1	1	0
Olver, jun., T.	1	1	0
Over, A. ...	0	10	0
Overed, J. D....	0	10	0
Owles, A. ...	2	2	0
Page, C. N. ...	1	1	0
Paley, D. ...	2	2	0
Pallin, W. ...	1	1	0
Panton, W. ...	0	10	6
Parker, J. ...	1	1	0
Paton, J. ...	1	1	0
Paterson, R. ...	0	10	0
Peele, H. ...	1	1	0
Peele, J. E. ...	1	1	0
Penhale, W. ...	1	1	0
Penhale, W. ...	0	10	6
Poyser, G. ...	1	1	0
Poyser, R. ...	2	2	0
Pritchard, Prof.	1	1	0
Procter, T. ...	1	1	0
Price, T. S. ...	1	1	0
Pyatt, F. J. ...	0	10	6
Pyatt, G. H. ...	0	10	6
Reynolds, R. ...	1	1	0
Reynolds & Son	1	1	0
Ring, Mrs. ...	2	2	0
Robb, A.... ...	1	1	0
Roberts, M. J.	1	1	0
Roberts, T. ...	0	10	6
Robertson, W.	1	1	0
Robinson ...	1	1	0
Rostron, J. ...	1	0	0
Rothwell, P. ...	0	10	6
Rowe, J., jun....	1	1	0
Rowe, R. ...	0	10	6
Rushall, A. ...	1	1	0

	£	s.	d.
Russell, Capt....	1	1	0
Santy, A. H. ...	1	1	0
Sartin, J. R. ...	1	1	0
Scott	2	2	0
Sewell, H. ...	2	0	0
Sheather, C. ...	1	1	0
Shaw, H. R. ...	0	10	6
Sheffield, S. ...	1	1	0
Shipley, W. ...	1	1	0
Short, G. R. ...	1	1	0
Simcocks & Son	4	4	0
Simonds, Prof.	1	1	0
Simpson, H. ...	1	1	0
Simpson, T. .	1	1	0
Smith, F.... ...	1	1	0
Smith, Prof. ...	10	0	0
Smith, W. ...	1	0	0
Snowball, G. ...	2	2	0
South, W. ...	1	1	0
Spreull, A. ...	0	10	6
Staiston, A. ...	0	10	6
Stanley, E. ...	5	0	0
Stanley, W. T.	1	1	0
Steel, C.	1	1	0
Steel, J. H. ...	1	1	0
Stevens, F. ...	0	10	6
Stephenson, C.	1	1	0
Storrar & Son...	1	1	0
Symonds, T. ...	1	1	0
Tailby, M. ...	1	1	0
Tait	0	10	6
Taylor, J. A....	3	3	0
Taylor, T. ...	2	2	0
Taylor & Son ...	10	10	0
Thompson, H.	1	1	0
Thompson, J. R.	1	1	0
Torr, C. H. ...	1	1	0
Trigger, R. C.	1	1	0
Unsworth, J. ...	1	1	0
Vincent, P. ...	0	10	6
Victoria S.P.C.A.	1	1	0
Walker, F. ...	1	0	0
Walley, Prof. ...	1	1	0
Wallis, Page ...	1	1	0
Walters, R. E.	1	1	0
Ward, R. ...	1	1	0
Welsby, J. ...	1	1	0
Whincop, G. ...	0	10	6
Whittle, W. ...	2	2	0
Whitworth. C. J.	1	1	0
Wiggins, J. ...	1	1	0
Williams, Prof.	2	2	0
Withers, H. ...	1	1	0
Withers, S. H.	1	1	0
Woodger, E. ...	1	1	0
Woodger, jun. J.	1	1	0
Woods, W. ...	1	1	0
Wragg, F. W.	1	1	0
	£372	14	0

Jurisprudence.

SUFFOLK ASSIZES.

Alleged Negligence by a Veterinary Surgeon.

THIS suit, Smith *v.* Marking, was tried before Lord Chief Justice Cotton, in February last, Serjeant Ballantine, Q.C., and Mr. C. E. Jones for plaintiff; Mr. Bulwer, Q.C., and Mr. Digby for defendant.

The plaintiff, Mr. Benjamin Smith, resides at Great Tagley Farm, Stambourne, Essex; defendant, Mr. Charles Marking, veterinary surgeon, resides at Toppesfield, in the same country. It was an action to recover the value of a colt, which it was alleged had died through defendant's negligence in performing an operation.

Serjeant Ballantine said the question the Jury would have to determine involved details of a technical and very disagreeable nature. It was necessary to perform a certain operation on horses, but if it was to be performed at all it should be done with mercy and feeling towards the animal, which for the purpose of being made more useful to mankind was subjected to such a fearful and cruel ordeal. The charge against the defendant was that, so far from using consideration for those feelings, and applying the skill that ought to be applied in an operation of that kind, exhibited the grossest want of skill, flagrant negligence, and cruelty, which if he described it to the jury as it was described to him, would make their blood run cold. If the jury were agreed on the facts, all they would have to consider was the value of the colt, which died through defendant's maltreatment.

The learned counsel agreed as to the value of colt at £45, in the event of a verdict for plaintiff on the question of negligence.

The evidence, briefly, was to the effect that the colt escaped just when everything was ready for the operation, and when it was captured it was in a high state of excitement for the exercise, and in an unfit condition to undergo an operation. This was mentioned to defendant by plaintiff, but defendant said now he had caught it he would cast it, *i.e.*, secure it with a rope used for

that purpose. This he did and proceeded to get his instruments ready. One of the irons not being firmly fixed in the handle he secured it by striking it on the horse's leg, and on being expostulated with by one of the men he secured the second searing iron by striking it against the wall. Plaintiff remarked that defendant was not performing the operation properly. The defendant had to be again sent for, and in the night he performed another operation on the poor colt. Plaintiff treated the colt according to defendant's instructions, but it died after great suffering.

Plaintiff's statement was corroborated by several witnesses.

Thomas James Polton, member of the Royal College of Veterinary Surgeons, residing at Messing, said he had heard the evidence, and was of opinion that the operation had been improperly performed, and gave his reasons. One was the failure to arrest hæmorrhage by cauterising with a hot iron. It would not be safe to perform the operation while the horse was in a heated condition from exercise because of the relaxation of the voluntary and involuntary muscular fibres of the body: and it would tend to produce hæmorrhage. He described the mode of treatment he would have adopted to stop the effusion of blood. The irons used should not be too hot or too cold. If too hot the iron would destroy the contracting tissue which should form the plug to stop the bleeding. To sew up the wound, as was done in this case, would ensure the animal's death, by causing blood poisoning. Had never heard of an animal being afterwards punctured by a needle, or by anything like the instrument produced. Never saw such a thing at College. Puncturing was so highly objectionable that no one out of a lunatic asylum would do it under such circumstances.

By Mr. Bulwer: Did not know anyone in the profession in this locality. Had heard of Mr. Shorten, of Ipswich.

Mr. Bulwer: Supposing he were to differ from you, you would consider him a lunatic?

Witness: I certainly should. (Laughter.) I have never heard of such a thing. (Laughter.)

That is quite enough; I am quite satisfied. In medical literature, in your extensive reading—(a laugh)—have you never met with such a thing?—No answer.

I want to know, because this is a scientific question. Have you heard of Mr. Wallace, of Halstead?—Witness replied that he had, and that he was very highly spoken of.

If he happened to differ from you, following the same course of reasoning, would you think he was a lunatic?—I never heard of such a thing. It's against all scientific reasoning. (Laughter.)

I don't care whether it is against all scientific reasoning or not. (Laughter.) You have said that the man who would say such a thing was a lunatic?—I did.

Mr. Bulwer: Then if Mr. Wallace differs from you, he is a lunatic? (Laughter.) A long pause.—Yes. (Much laughter.)

Mr. Wright, of Ipswich—do you know him?—I have never seen him.

You need not have seen him—have you heard of him?—No.

You have heard of Mr. Avis, the consulting physician of the Royal College of Surgeons?—There are no physicians of that college. (A laugh.)

I will correct my remark and say "consulting surgeon." Do you know him as a consulting surgeon?—I never knew him as a consulting surgeon. I only knew him as a demonstrator.

Well, I will be satisfied with demonstrator. (Laughter.) I suppose that involves great knowledge and high skill?—I dare say it does.

If he should go into that box and differ from you, he also is a lunatic?—Very likely; following the same course of reasoning, yes. (Laughter.)

I have a book here written by William Williams, with a great number of letters after his name, and four lines describing his distinctions. (Laughter.) He has written a book on the "Principles and Practices of Veterinary Surgery." Do you know enough about it to tell me whether it is a book of authority?—I think it is from what I have heard.

Mr. Bulwer read a paragraph bearing upon the subject of the case, including the words, "A few punctures of the lancet would allow the serosity to drain away." Do you agree with that?—Yes, when it extends to the abdomen, but not otherwise.

Will you withdraw the "lunatic"? (Laughter.) Yes, so far as the abdomen is concerned. (Laughter.)

Do you consider the person who punctured that would be a lunatic or otherwise?—No. (Laughter.)

Mr. Peter S. Cowan, member of the Royal College of Veterinary Surgeons, living at Colchester, deposed to the impropriety of operating on a horse, under the conditions described. It was wrong to do it while the horse was in a perspiration from exercise, because the muscular system was in a flaccid condition.

Cross-examined: There is a medicated tow used in my profession as well as the coarse tow, but I know of no conceivable instance in which tow might be used in these cases. It would not be proper.

Mr. Bulwer: Don't you become an advocate. (Laughter.)

Serjeant Ballantine: And you must not become a witness. (Laughter.)

His Lordship requested witness to answer the questions to the best of his knowledge.

Witness promised to do so, but wished to guard against being confused. (Laughter.)

Mr. Bulwer: You want to avoid the difficulties of the previous witness. (Laughter.)

Witness: Yes. (Laughter.) It was not proper to give the horse a bran mash. He should have given it bran and scalded oats.

Mr. Bulwer: Why?—If you give it to a horse once, particularly a young colt, you will never get him to eat it again. (Laughter.)

Come, now, I do know something about that. (Laughter.) Would you not give it to your horse after hunting?—No, I should give him boiled linseed, scalded oats, and bran.

Have you ever known horses refuse bran-mash?—Yes, hundreds of times.

Re-examined: I have operated on many horses—four in an hour.

This closed the case for the plaintiff.

Mr. Bulwer said it was not for the sake of saving the £45 that the defendant instructed him to defend this case, but to save his own personal character from the charges that had been made against it. Serjeant Ballantine's words in opening the case had not yet lost their effect on the minds of the Court. The defendant was accused, not merely of the grossest want of skill but of downright cruelty to a dumb animal. Serjeant Ballantine used those words, not, he firmly believed, from his own heart, not at the instigation of the solicitor, but at the desire of the plaintiff himself. It would have been sufficient to have alleged that defendant did not perform the operation with sufficient skill, and the result was the colt died; but he charged him not merely with want of skill, but want of humanity Serjeant Ballantine was eloquent on that point, and he (Mr. Bulwer) went with him in the eloquence that pleaded for tenderness and mercy to dumb animals. The plaintiff, who had received an attorney's letter from the defendant to pay his bill for his services as veterinary surgeon, was the man who made these charges against the defendant for the sake of the trumpery money. He (Mr. Bulwer) would now call before the jury the "lunatics"—(laughter)—gentlemen of undoubted

experience, and after they had heard their evidence, he trusted they would say this was an unworthy attempt to ruin the defendant's character, and to stigmatise him with having committed this crime, for the cruelty imputed to him, if true, would amount to nothing less. He trusted the jury would find that there was no foundation for the allegations which had been made. The plaintiff would have to submit to his loss through not having carried out the directions his client gave him. The defendant might have committed errors of judgment; so might a doctor attending a child; a doctor was bound to bring reasonable skill, but because he committed errors of judgment, he was not to be branded as an unskilful man.

The defendant, who holds titles of distinction in his profession, described his mode of treatment, and denied *seriatim* the charges of negligence and cruelty. He attributed death to inflammation of the peritoneum, produced by cold and, probably, improper diet.

In cross-examination he adhered to the propriety of his method of treatment, which in many features, was as described. He held a diploma from the College at Edinburgh.

His Lordship: Where were you taught to use tow as a plug?

Defendant: At the College at Edinburgh, my lord.

In reply to Mr. Jones, defendant said two colts had died at Mr. Philip Witlock's, after a similar operation had been performed by him. They died from cold.

Mr. Thomas Avis, hospital surgeon at the Royal Veterinary College, honorary surgeon of the Royal Medical College, etc., said the operation was performed in a properly correct way, and the diet defendant recommended was correct. It was most improper to give (as it was alleged the plaintiff had given) oats to a horse while it was suffering from the effects of the operation.

Mr. Bulwer: Do you agree with the remark that a horse which had eaten one bran-mash is not likely to eat a second?

Witness: Some horses do not care about bran-mash, but they are very scarce. It is proper treatment to give horses bran-mash after they have done hard work. Some of the pigs he attended at Mr. Unwin's, at Baythorne Hall, died; also lost a bull.

By Mr. Bulwer: There is the same amount of danger attending operations on animals that there is to human beings—some died.

Frederick Golding, in the service of the defendant, was called and deposed to having assisted his master in the operation; he denied the alleged cruelty.

Cross-examined by Serjeant Ballantine as to the way the searing irons were used, he said one was loose in the wooden handle; the other was all right.

William Shepherd Wallace, examined by Mr. Bulwer, said: I am a member of the Royal College of Veterinary Surgeons, and I have been in practice 40 years. I reside at Halstead. I have heard the evidence of defendant, and I think he performed the operation properly. The irons do not appear to have been used improperly. It is very common for the handle of the iron to become loose, and the remedy is to tap it on some hard substance. Even taking plaintiff's evidence to be correct about the heat of the colt, I do not think it was in an unfit condition to be operated upon. Assuming the operation had been successfully performed, the process of heating would be prevented if the horse, particularly a young colt of a lively nature, was allowed to run about. Had heard that some colts, after undergoing the operation, were apt to show a disposition to go about as before, but he was sceptical on that point. (A laugh.)

Serjeant Ballantine: The witness Martin said, "I saw the colt when brought back very hot and steaming." Would you have operated on it at the moment? (A pause.)

Witness : I should like to give you a straightforward answer, Sir.

Serjeant Ballantine : I want your opinion on the evidence you have heard.

His Lordship said the learned Serjeant must take the responsibility as to the correctness of his version of the evidence.

Witness (to Serjeant Ballantine) : You put it very strongly. It is a most difficult thing to answer.

Serjeant Ballantine : You have given straightforward answers hitherto, and I expect you to do so now.

Witness : You put the questions stronger than the circumstances justify.

That has nothing to do with it. Would you suppose it to be correct to perform the operation while the animal was in that state?—No, I should not.

In reply to other questions, witness said it was impossible and impracticable to use the forceps in such cases. Never had a case in which bleeding from the spermatic artery was stopped with tow. Had had cases where arteries which could not be got at were stopped with tow. If the artery was not stopped with bleeding the animal would bleed to death. The only alternative, not being able to get at the artery, would be plugging in the way described. That would not necessarily produce mortification, but in many cases mortification would ensue.

Alfred John Shorten, examined by Mr. Digby, said : I am a veterinary surgeon practising at Ipswich. I am a member of the Royal College of Veterinary Surgeons. I have been in Court during this case and have heard the evidence. I consider the defendant's treatment was proper, both during the operation and subsequently. There is no objection to perform the operation while the animal is hot. It is seldom we castrate a colt that is not hot. They heat themselves in the act of being caught and cast. I agree with the last witness as to the propriety of plugging—nothing else could be done.

Cross-examined : I have performed the operation of plugging while there was a flow of arterial blood. It is a dangerous operation, but so far as my experience goes there is a reasonable chance of success.

Re-examined : The colt I operated upon was the property of Mr. Garrett, of Carlton Hall. It lived after the operation.

Mr. Charles Wright, veterinary surgeon, Ipswich, examined by Mr. Digby, concurred in the treatment the colt had received.

Cross-examined : The mode in which the plug was applied was quite right. It is the only method of stopping the hæmorrhage. I do not agree with Williams' book (assuming the word toxic means general poisoning) that blood poisoning would necessarily ensue.

Professor William Pritchard, of the Royal Veterinary College, examined by Mr. Bulwer, said he had never operated on a colt that was not in a sweat. The process of casting would put it in a sweat ; besides which colts struggled violently on such occasions and were greatly terrified if unsuccessful in their struggles. The older the animal the more difficult the operation. Anything calculated to excite the animal after the operation would be prejudicial. It should be kept quiet. It would not be wise to turn it into a large barn to frolic about with another colt. He should be sorry to allow a patient of his to do so. Bran-mash with a few oats was the proper diet, but only sufficient oats to entice it to eat. Should not object to perform the operation with the instruments produced. Assuming hæmorrhage ensued, he should plug the scrotum with tow, which would form a coagulum, that would prevent the flow of blood. Should not remove it until a coagulum was formed ; but it would be dangerous to leave it in a fortnight, as it might produce blood-poisoning. Three days would not be too long. Performed the operation of plugging successfully a little while ago, and taught his pupils how to do it.

On that occasion the plug was left in from Monday to Wednesday. About 70 out of 100 treated in this way recovered.

Mr. Bulwer and Mr. Serjeant Ballantine having addressed the jury,

Lord Justice Cotton summed up, leaving to the jury the question whether the death of the colt was attributable to negligence on the part of the defendant, and further whether the defendant's treatment would have led to the death of the horse if the plaintiff had treated it with reasonable care.

The Jury, after a very short consultation, found a verdict for the defendant.

Mr. Jones asked for stay of execution for defendant's costs for a week, but Lord Justice Cotton declined to grant it.

Army Veterinary Department.

Gazette, April 29*th*.

14TH HUSSARS.—Veterinary Surgeon D. C. Pallin, from the Royal Artillery, to be Veterinary Surgeon, *vice* Veterinary Surgeon, First Class, W. A. Russell, transferred to the Veterinary Department..

VETERINARY DEPARTMENT.—The undermentioned Veterinary Surgeons, on probation, to be Veterinary Surgeons dated Oct. 5, 1878 :—R. H. Ringe, C. E. Smith, G. H. Fenton, R. Pringle.

Gazette, May 16*th*.

VETERINARY DEPARTMENT.—The undermentioned gentlemen to be Veterinary Surgeons on probation :—Arthur Wilberforce Mason, in succession to Veterinary Surgeon S. T. Goddard, Royal Artillery, placed on retired pay. Edmund Day, in succession to Veterinary Surgeon, First Class, J. Ferris, Royal Artillery, placed on temporary half-pay. Charles Rutherford, in succession to Veterinary Surgeon, First Class, T. J. Lang, Royal Artillery, deceased. Edmund Woods Goldsmith, in succession to Veterinary Surgeon W. Oliver, Royal Artillery, retired upon half-pay. Kay Lees, on augmentation.

Gazette, May 23*rd*.

VETERINARY DEPARTMENT.—The undermentioned Veterinary Surgeons, on probation, to be Veterinary Surgeons :—Thomas Alexander Killick, John Burke Savage.

The undermentioned gentlemen to be Veterinary Surgeons on probation : —Francis Kennedy, on Augmentation ; Albert Douglas Drake, on Augmentation ; Frederick Walewski, on Augmentation.

Obituary.

WITH sincere regret we have to announce the demise of George William Varnell, for many years Professor of Anatomy and Physiology, as well as Clinical Instructor, at the Royal Veterinary College, London. This melancholy event occurred at Belton, Suffolk, on April 26th, in the seventy-third year of his age, and by it the profession has lost one of its most devoted and, at one time, active members. In early life we believe the late Professor dis-

played a great predilection for Veterinary medicine, and having acquired by observation some rudimentary knowledge of its more practical requirements, fortune led him to take up his abode in America, where he was so successful as to amass sufficient means to enable him to return to England, enter the Royal Veterinary College somewhere about 1843, and graduate in April, 1846—leaving behind him in the United States a good name. As a student he soon attracted the attention of Professors Sewell and Spooner, who were struck with his assiduity in anatomy; and he had no sooner graduated than he was appointed Demonstrator of Anatomy—an office in which he rendered good service, as an efficient teacher was then sadly required. His quiet demeanour and genial manner of addressing students soon made him a general favourite; consequently, we need not wonder that presentations from the students were made to him more than once, all of them useful and valuable. After some twenty-four years of close labours, but unfortunately not always congenial companionship in collegiate duties, Professor Varnell retired in 1867 to the place where he died.

As an anatomist, Varnell was fully competent to teach students the anatomy of the horse—or rather ass, the animal chiefly dissected at Camden Town. His map of the arteries of the horse testify to his knowledge of the subject; and with the crayon we are assured that he was more than an amateur in sketching anatomical outlines. As an operator he was not surpassed at the school, possessing, as he did, coolness and tact, and a good idea of surgical anatomy; while as a clinical instructor he was most painstaking and very successful.

Professor Varnell was much respected by the Veterinary profession, and took much interest in its welfare. In 1865 he was elected President of the Royal College of Veterinary Surgeons, and he also served as Vice-President. When the Fellowship Degree was conferred, he was the only teacher of the Royal Veterinary College who elected to be nominated a foundation Fellow, thus honouring the degree by allowing the honour to be conferred upon him. On severing his connection with the London School, a very costly and elegant testimonial was subscribed for and presented to him by a large number of professional friends.

At his funeral on May 2nd, a deputation of Veterinary Surgeons representing the profession and the Eastern Counties Veterinary Medical Association, attended to pay their last sad tribute of respect to the memory of one whose distinguished professional attainments were manifested not only in his teaching, but in the papers he at various times contributed for the instruction of his colleagues.

Notes and News.

CONTAGIOUS DISEASES IN THE UNITED STATES.—A Bill introduced into the United States Senate appropriates a sum of £52,083 6s. 8d. for the purpose of stamping out contagious diseases among cattle in that country. It proposes to investigate all contagious diseases among stock, and to slaughter all animals infeeted with Pleuro-pneumonia. The report of the Agricultural Department states that the returns for the month of April show that the farm animals are in unusually good condition, and that no virulent disease now exists, excepting Hog-cholera in the West, and Pleuro-pneumonia in six of the Eastern States.

ELECTRICITY IN HORSE TRAINING.—We find from our French contemporary, *La Nature*, that the General Omnibus Company of Paris has for

some time past made use of electricity for subduing vicious horses. At a recent *séance* of the National Society of Agriculture, M. BELLA gave some interesting details on the subject. By the process adopted, intractable animals given to biting, rearing, kicking, &c., are rendered inoffensive, and submit peaceably to be groomed and harnessed. To obtain this result a weak current of electricity is passed into the mouth of the horse each time it becomes restive. The will of the animal seems almost annihilated. The current is produced by a small induction machine, of the CLARKE system, the wires of which communicate with the bit of the bridle. The idea of controlling horses by electrical means found expression in the Exhibition last year; in the Swedish section was an apparatus with this object. It consisted of a small box containing a battery, the wires of which communicated with the bit by the reins. In the case of resistance by the horse, the driver had merely to push a button, when a current passed immediately, and the animal became docile. The employment of electricity is said to produce a sort of uneasiness or torpor, rather than pain, and is much less barbarous than many taming methods hitherto adopted, such as those which depend on weakening by deprivation of food, on fatigue, &c.

ACORNS AS FOOD.—Some practical uses to which the acorn may be turned are detailed in the *Deutsche Landwirthschaftliche Presse*. One and a quarter pound of acorns were added to the usual daily food of a cow and a goat, for the period of six weeks, at the end of which time neither of the animals had lost condition, but were as well as when fed on oilcake, and the milk and butter they produced tasted better and had a better colour than when the latter article of consumption had been used; and they do not seem to have been injurious to the process of chewing the cud. Care must be taken that they are perfectly ripe when gathered, and cooked with the food. These few hints are given us by a Herr Kost, who has had twenty-five years' experience of this method.

AN UNUSUAL CASE OF RABIES.—In the Austrian journals the Freiherr von Hourichs publishes some particulars of a case of rabies in a foal that came under his notice in January last, near Boskowitz, in Moravia. The animal, a two-year-old roan, of Wallachian-Norfolk breed, was bitten in the nose by a rabid dog, about the middle of July, 1878. It was at once separated from the other stock, and kept under close observation for the period of four months, as enjoined by the Austrian law. At the end of that time, as not the slightest symptom of disease had appeared, it was re-admitted to the company of its fellows. More than six months after the bite, the colt was noticed one day to be restless, and constantly rubbing the nose on the seat of the old injury. It was at once isolated. Very shortly, hurried pulse and breathing were observed, the appetite was irregular, swallowing liquids became extremely difficult, the animal recoiled with apparent horror from the water pail, the excrements were scanty, and their passage painful. On the doors of the stable being opened the unfortunate patient uttered inarticulate sounds, more like shrieks than a horse's neigh. It ate its own dung, bit deeply into the woodwork, and slobbered saliva freely. Half an hour before death gnashing and grinding of the teeth began, the paralysis of the hinder quarters set in. From the first appearance of the first symptoms to the time of death occupied a period of three days; the decomposition of the carcase set in in a few hours, though the weather at the time was cold and frosty.

HOW TO CLEAR COWSHEDS AND STABLES OF FLIES.—The *Breslauer Landwirth* notices a variety of methods by which this desirable object may be accomplished. One good plan is to place small dishes of chloride of lime

immediately under the roof, and frequent lime-washing of the walls is also said to be of great assistance. Another method consists in the employment of a preparation composed of 120 parts of Dalmatian insect powder, two parts of finely divided sulphur, and two parts of Lycopodium. The mixture should be kept in a pig's bladder furnished with a quill nozzle, and a little of it sprinkled from time to time where the flies set thick together in the early hours of the morning. Its poisonous effect upon them will be made evident in a very few minutes. A cheaper plan consists in suspending a small bundle of mugwort or motherwort *(Artemisia vulgaris)* or a small willow bush, from the ceiling of the room, kitchen, or stable, when the flies, apparently attracted by the smell, will settle upon it in great numbers as evening sets in. A wide-mouthed bag is then held immediately under the bundle, and the string which suspends the latter suddenly cut through with sharp scissors. The bundle with its load of flies falls into the bag, and can then be destroyed by fire or water, or other convenient means. A still further plan is to fumigate the rooms with dried rotten cow dung, which should be allowed to burn slowly in a pan of glowing charcoal. Flies appear to be utterly unable to support its pungent odour, and if the doors and windows are now thrown open will hasten to make their escape through them. The same holds good also of moths, gadflies, wasps, and many other undesirable visitors belonging to the insect world.

DISINFECTION OF STABLES DURING INFLUENZA.—The Prussian Ministry of War has just issued a general order relative to the precautions to be adopted in outbreaks of influenza among the horses in military stables. The chief points insisted on are as follows :—So far as the condition of horses which cannot be removed will admit of it, all such stables must be thoroughly ventilated and scrupulously cleaned. The walls and roofs, so far as they consist of wood, the iron-work, and the flooring must be scrubbed with hot water and soap ; lime-washed walls must be gone over afresh, and the flooring strewed with gypsum. When still more vigorous measures are required, the following is the plan of procedure to be acted on :—The horses being first removed, pans of sand holding bottles containing 250 grammes of bromine are to be placed about the stables, in the proportion of one pan and bottle for each 18 cubic metres of capacity. All openings being closed, the bottles are to be quickly upset, so that their contents run into the pans of sand, and the operator, making his escape as quickly as possible, closes the door carefully behind him. In twenty-four hours' time the stables may again be opened, and, after they have been thoroughly ventilated for twelve hours, the horses may be re-introduced. Such iron fittings as are not fixtures should be removed before the process of disinfection commences, so as to prevent their rusting. Horse clothes and harness should be left in the stables while the disinfection is proceeding, but when the stables are again opened they must be well beaten and thoroughly aired. Fixed ironwork must also be cleaned and polished. Where bromine is not employed, all harness and fixtures must be aired and cleaned as thoroughly as possible.

THE "LUPINE SICKNESS" OF SHEEP.—Pending the inquiry into the causes and means of prevention of this now prevalent disease, which it has been suggested should be undertaken by the Prussian Ministry of Agriculture, reports of its occurrence in many different parts of Germany continue to appear in the various agricultural journals of that country. Among the latest of these is one furnished to the *Hannoversche Landwirthschaftliche Zeitung*, by Herr Grütter, of Memsen. Of the 750 sheep of which his flock was composed, 450 received lupine, and the other 300 did not. In about two days after the lupine-feeding had commenced all the first division fell ill, they lost appetite, suffered from constipation and irritation of the bladder, and their eyes

assumed a peculiar yellow colour. On the fourth and fifth days thirty-three of them died, and altogether 58 were lost. The other 300 sheep, which had received no lupine, remained perfectly healthy. An examination of the lupines that had thus proved deleterious, and of some of another sort grown upon a different part of the same field, was thereupon undertaken by M. Meyer, of Hassal. The first variety was found to contain a large quantity of poisonous fungi, while the second was quite free from them. Experiments in feeding were then made with the second variety, and in no case had they any injurious effect on the sheep to which they were given. Both crops of lupines had been got in in good dry condition, and it is further stated that the sheep had been folded on about eight acres of the poisonous lupines while they were still in the green stage, without sustaining any injury.

Parliamentary Intelligence.

House of Commons, May 8th.

AMERICAN PIGS.

Mr. KING-HARMAN asked the Vice-President of the Council whether he was aware that the disease known as Trichina Spiralis was reported to be extremely prevalent among the American pigs, large numbers of which were now being imported into this country; whether he had heard that in a recent consignment delivered at Wolverhampton, sixteen out of the three hundred pigs were found dead in the trucks, while four more dropped dead immediately afterwards, and that the whole of these twenty were found to be full of the Trichina worms; and whether he would take measures to prevent the horrible malady of Trichinosis being disseminated by the free importation of such diseased animals.

Lord G. HAMILTON.—The Government have not received any information of swine affected with Trichinosis having been landed in this country from the United States, but a cargo of swine, among which the disease known as Typhoid Fever existed, was landed at Hull, on April 25, and were permitted by the Inspector of the Privy Council to be removed from the landing place. Some of the swine were seized by the sanitary authorities in Hull and a large number were sent on to Birmingham, the authorities of which town had been informed by the Hull local authority of the destination of the animals. The inspector at Birmingham reports that all the swine have been slaughtered. The inspector who examined the animals on landing has been dismissed. Owing to the prevalence of Typhoid Fever among the swine in the United States and the number of diseased cargoes arriving here, by an order in Council American swine must be slaughtered at the port of debarkation.*

May 12th.

PLEURO-PNEUMONIA IN AMERICAN CATTLE.

Mr. MUNDELLA asked the Vice-President of the Council if he was aware that Professor W. W. Williams, of the Edinburgh Veterinary College, had written a letter to Dr. Laidlaw, veterinary pathologist of Albany, New York,

* There is every reason to believe that quantities of pork, and also numbers of live pigs infested with Trichina, are imported from America to this country. We may also expect, and indeed have already had, invasions of Swine Plague from the United States.

denying in the most emphatic terms that pleuro-pneumonia had existed in any cattle hitherto imported from the United States; whether his attention had been called to a letter of Professor Williams, dated 29th of March, in which the following passage occurred:—"Since first arrival of Ontario with cattle others have arrived at Liverpool, and I have examined the lungs said by Privy Council inspectors to have pleuro-pneumonia, and satisfied all who have seen them that no pleuro-pneumonia has arrived here from America; indeed, everybody is surprised that such a gross mistake should have been made. The last lot—seven in number—examined by me had bronchitis, with collapse of the lung, but not a trace of pleurisy nor of pneumonia, yet they were declared by the authorities in London to have typical pleuro-pneumonia. I have the specimens most carefully preserved, and am ready to show them to the whole world if necessary;" and what steps he proposed to take to satisfy himself of the correctness of those statements.

Lord G. HAMILTON replied that a statement of Professor Williams was forwarded to the Privy Council Office by the Canadian Government last month, and upon receiving it the Privy Council requested Professor Brown, the head of the Veterinary Department, to investigate the subject. He would read the memorandum which he had drawn up, and which was sent in reply to the Canadian Government:—

"On January 26, the steam ship Ontario arrived at Liverpool, having on board 195 cattle and two carcases; 87 head of cattle had been thrown overboard, making the total number shipped 284. On examining one of the carcases, the inspector at Liverpool found evidence of pleuro-pneumonia, and forwarded portions of the lung to the Veterinary Department. This specimen was found to represent the characteristic indications of the contagious pleuro-pneumonia of cattle so well known in this country. By direction of the Lord President I immediately instructed Mr. Duguid, one of the inspectors of this department, to proceed to Liverpool and report as to the condition of the animals which had been detained there. Mr. Duguid remained at Liverpool and superintended the slaughter of the cattle, and in the course of the *post-mortem* examination he detected thirteen cases of pleuro-pneumonia in various stages. Since the landing of the cattle from the Ontario in January, cases of the disease have been detected among cattle from the United States by the inspector at Liverpool in three other cargoes, and in one cargo by the inspector at the Foreign Cattle Market, Deptford. Portions of the lungs taken from the diseased cattle were forwarded by the inspectors to the Veterinary Department, and I took the opportunity of submitting some of the specimens to the inspection of several expects who have made pleuro-pneumonia of cattle a subject of special inquiry, and they were unanimous in their expression of opinion that the morbid changes were indicative of contagious pleuro-pneumonia. I may add that the alterations which are apparent in the lung structure in contagious pleuro-pneumonia, even in the earliest stages, are so different from those which occur in any other affection of the lungs of the ox, that no competent pathologist would experience any difficulty in arriving at a correct conclusion as to the nature of the disease.

He might add that since the date of the report six cargoes of cattle from America had been landed at Liverpool and Deptford in which contagious pleuro-pneumonia had been found to exist.

May 22nd.

ARMY VETERINARY DEPARTMENT.

In reply to Col. Arbuthnot, Col. Stanley stated that no decision had yet been arrived at in regard to the amendment of the Veterinary Warrant of May 1, 1878.

Correspondence, etc.

A REMINISCENCE OF THE ANNUAL MEETING, MAY 5TH, 1879.

To the Editor of the VETERINARY JOURNAL.

SIR,—Another annual gathering or reunion has passed. The report of the year's labour of the President and his Councilmen has been submitted to the profession, and well might the report have closed with the remark, "*Nous avons donné à penser.*"

The gathering in the Council Chamber (numbering some 102 members) was not so numerous as is usual, many provincial men of promise being absent, doubtless due to the only object they have in attending the meeting being performed through the Post-office. Of metropolitan men there was, I suppose, about the usual fair complement. It is, however, much to be regretted these reunions are not more fully attended—that, in other words, the members do not display more interest and enthusiasm in the government of the profession; such display would doubtless materially aid us in the obtainment of a suitable edifice for our College, by proving the very inadequate accommodation for such numerous gatherings "of the representatives of so noble and important a profession to the Commonwealth."

It must, however, be a source of satisfaction to earnest members to hear there is a possibility of a new building being acquired before our next gathering. Equally pleasing must it be to know that all differences between the College and the Highland Society have been satisfactorily adjusted, and that we may anticipate the tranquillity of a permanent calm.

The discussion on bye-law 37 has led me to think that, as the Royal College is at present related to the Royal Schools and those not Royal, the clause should never have had existence; for as matters are now conducted, any man who can answer a few School Board queries, and do the principal sum set him, *i.e.*, count out correctly the amount of the College entrance-fee, these two desiderata being all that is demanded from the intending student, neither character nor introduction being deemed necessary. This being so, should our Royal College of Veterinary Surgeons sympathize with the schools by refusing to examine these students but three times, then send them forth as *pirates* on the *qualified*—for these men make the worst kind of professional parasites, and can moreover assert that they were only permitted to go up three times, and that after spending all their money, they were cast adrift to starve, or eke out a livelihood as quacks. Again, the medical profession is open to students as often as they choose to pay examination fees and obtain the necessary certificate of attendance, etc.—in fact, I believe it to be the rule in all other professions to permit the student properly furnished, with an order and cash, to apply for a ticket as often as he may think fit. I should certainly not extend my sympathy to any school that might gorge itself with vicious, lazy, or profligate young men; if the schools think proper to accept the lucre of these men, they should certainly be made to suffer, and to either refund them their money or submit to their presence.

The R.C.V.S. examiners should certainly examine them on the fees being paid and certificate of school produced, and pluck them as often as they come; then, should the candidates sicken of attempts, and start on empirical careers, the qualified men would have them quite in hand, and could say that, if they knew their duties they could easily prove it, as the examiners were always ready to grant them the diploma if competent.

Such unfortunate young men as Mr. Wallis's son would then have no cause to petition the College, in a manner most unusual and ill-advised; for if such be sanctioned, when and where will it cease.

Whilst the preliminary examinations are conducted by the schools the 37th bye-law would, being repealed, exercise a salutary influence, and make the professors inspect their freshmen before admission, as is the custom in the army, police, shoeblack-brigade, etc. But as soon as the R.C.V.S. have their legal duties imposed on them, then I go over to the schools, and by no means would I wish to see them obstructed or blocked by useless masses of human flesh, the accumulation of which arose from causes out of their control.

There is an old maxim—

"De mortuis nil nisi bonum,"

which, if it had been remembered at the moment by a sage member, much pain to others might have been saved; if in former times such conduct as he referred to did take place, at this present it would not for one moment be tolerated, and doubtless it was a "lapsus linguæ," for I will not have it said, "son langue est son épée, et il ne la laissent pas rouiller."

It is well for us if we can, without fear, look on death as a certainty, and be led to anticipate it, for we have been told by an old and wise man, to "familiarise yourself early with death . . . . it is only dreadful for those who dread it!"

"Far happier are the dead, methinks, than they
Who look for death, and fear it every day."

Death has been busy in our ranks this year, sixty-one members having passed from our midst, the last being an old and familiar friend to many members—Professor Varnell—esteemed and deeply lamented by all. To fill this wide gap we have sixty-nine new members, and it is to be hoped that among them will be found those equal to our losses, our expectations being good, from report of examiners.

The issue of the annual report a few days before the meeting will certainly allow the whole body of members to know its contents earlier, and if our journals make better use of the space usually allotted to reprint of the report, there cannot be any very strong objection to the cost of printing so many and the postage?

The financial report of the Treasurer appearing satisfactory, the meeting dissolved.

The dinner this year, as last, took place in Freemasons' Tavern, more than seventy members and friends to the craft being present. It was expected many more would have attended, as the very interesting ceremony of presenting the Fleming Testimonial was to take place.

The President, General Sir Frederick Fitzwygram, Bart., occupied the chair, supported by several military friends, General Shute, Colonel Ewart, 2nd Life Guards, Colonel Kingscote, C. N. Newdegate, Esq., M.P., etc

The usual loyal toasts having been suitably proposed and honoured, the toast of the Schools was responded to by Professors Simonds and Williams, the former delivering an inexhaustive address on the St. Pancras School arrangement, especially the novel means of instruction in cattle pathology. Sick cows, invalid bulls, neat cattle and sheep labouring under various forms of disease are not to be found at cattle markets, or a fair knowledge of morbid anatomy obtained by witnessing the butcher operate; so that the history of a case, should one be discovered there at times, would be *found* of importance. It is useless; you cannot shuffle a knowledge of cattle pathology into students in any other field (Copenhagen included) than the broad *field of actual practice*. The sheds, byres, and pastures wherein the animals are kept must be visited, cases of all kinds watched to make the young men sound practitioners—superficiality will never answer—time must be spent with a

practitioner in the country, until such time as the College acquired "a College Farm." The Royal Agricultural Society should demand this, and the sooner the better.

Colonel Kingscote, replying for the R.A.S., spoke of the forthcoming show at Kilburn, the largest and most varied ever held, to which no doubt every member will pay a visit.

Mr. Newdegate, replying on behalf of the governors of the R.V.C., spoke of their desire to promote and advance the science of veterinary medicine, and of his long family connexion with the College, a guarantee, if one is needed, of his deep and lively interest in the profession.

Colonel Ewart, in proposing the Army Veterinary Department, spoke in the highest praise of the improvements in all branches of this service, as well as in the veterinary officers.

The speech of the evening was that of General Shute, who, in terms of praise, spoke in the most choice language of the vast strides made in all branches of the profession, and hoped such would continue.

THE PRESENTATION.

The PRESIDENT called on T. Greaves, Esq., to present G. Fleming, Esq., with the handsome testimonial subscribed for by members of the profession, as a cheering reminder from them that he in his workshop was not forgotten by them, and that they enjoyed the fruits of his labour in his sanctum. Mr. Greaves—moved deeply by inward emotion, spoke feelingly the written address he had prepared for the occasion, working in impressive, familiar quotations from various works of leading authors, to relieve his own words—presented the testimonial, which consisted of an elegant chiming hall-clock, of first-class manufacture, by a well-known maker, and a purse containing 300 sovereigns. Mr. Fleming, in a most natural, easy, although slightly emotional manner, thanked his friends, the subscribers, for this mark of their esteem of him and his labour in the cause of veterinary literature, to accomplish which it had necessitated him to apply himself, firstly, to the study of languages; this task over, then the literary work began, and now this moment was the happiest and proudest of his life—to know his self-imposed tasks had been the means of placing himself in the proud position he was that evening; he should, he said, ever continue in his work as long as health permitted, and until the silver cord had snapped, when he must put down the pen, till then he was a sincere worker in the profession's cause.

Mr. Fleming on resuming his seat was most heartily cheered.

The evening was most enjoyably passed, and those who were not there missed a professional reunion treat.

May all meet again next year in full health and prosperity, with all party differences adjusted and buried for ever, so that no more opprobrious remarks may be cast at us and our motto, but that "*Vis Unita Fortiori*" shall be our motto, indeed, is the earnest wish of

Your obedient servant,

"ARTEMUS SECUNDUS."

London, *7th May*, 1879.

VETERINARY POLITICAL HISTORY.

To the Editor of the VETERINARY JOURNAL.

SIR,—In reading the report of the meeting of the Lancashire Veterinary Medical Association, published in this month's VETERINARY JOURNAL, I observe that the President, in his inaugural address, makes abundant reference

to the "political aspects of the profession," and to its past history; though he confessed he could not speak with any confidence or authority on this subject, and begged to be corrected by those present if he made a mistake. As he undoubtedly erred, through his inacquaintance with the history of certain events, and as no one ventured to correct him, I hope you will afford me space to set him right, and especially as his remarks are not only erroneous but injurious. In the first place, he asserts that up to the last two years the provincial members of the profession were unrepresented in the Council. I need but refer to the list of members of Council for the last ten years, or more, to prove the incorrectness of this assertion. The statement that "few changes took place in the Council chamber, and the only new blood infused into this semi-fossilized body was the access of a Metropolitan practitioner. . . . or the election of an Army Veterinary Surgeon, who, from his position in life, was not acquainted with the requirements of the general practitioner, nor capable of representing him at the Council Board," is as unfair and unfounded as can be, and I am more than astonished at the audacity with which it was made. I say nothing for the Metropolitan practitioners; but for the Army Veterinary Surgeons I do maintain that the assertion has not a shadow of fact to support it. If Mr. Dacre will read or inquire, he will find that but for the Army Veterinary Surgeons on the Council, the Royal College would to-day have been non-existent. It was they—in fact, it was yourself, sir, who first put an end to that odious system of brow-beating which had been so successfully practised by the late Professor Spooner, whenever any project for the improvement of education was mooted. It was mainly, or indeed entirely, through the exertions of these gentlemen that the London school did not obtain a charter which was doubtless intended (though not by the Governors, who were honourable gentlemen) to destroy our corporation; and it was also chiefly, if not entirely, owing to them that the Highland Society was unsuccessful in its application for another charter, which would have split our small body into two miserable competing fragments cutting each other's throats, as the schools are doing at present. It was mainly by the exertions and perseverance of the Army Veterinary Surgeons on the Council that the new charter was obtained for the Royal College—a charter which has conferred the power of voting by proxy, of which Mr. Dacre makes so much. In all this, and very much more, the profession is but little indebted to the provincial practitioners, or indeed to many of the civil practitioners; and if the President will look at the committee and other work of the Royal College, he will certainly find that by far the largest share of it falls upon the army men, and has done so for years. If Mr. Dacre will spend a few hours in reading the history of the profession, and in a little reflection thereon, unless he suffers from that peculiar mental obliquity which his address leads me to suspect he does, he will not fail to convince himself that the Army Veterinary Surgeons have been far better acquainted with the requirements of the profession as a body, and the general practitioner as an individual, than the latter has, and have done far more for the benefit of the entire corporation.

As for the discontinuance of the examination of the Highland Society, and the amalgamation of the London and Scotch schools (which is nonsensical talk, as no one ever desired such amalgamation, and it will never occur) being effected by some Lancashire man, this is no more correct than the other assertions.

The discontinuance of the certificate system of the Highland Society only became possible when the obtainment of a charter by that Society became impossible, through the strenuous and long-continued opposition of the Royal College of Veterinary Surgeons and those graduates of the Scotch schools who were from the first loyal to their profession. The certificate system was played out and collapsed, and would have been so long ago had

not Lancashire men—members of the Royal College—given it their support, and the Principals of the Edinburgh schools countenanced it and allowed their pupils to patronise it. I do not deny that Lancashire has not had a share in the demolition of the certificate issuing; indeed, the great industrial city of Manchester has witnessed much professional agitation at times, and notably in September, 1867, when Professors Williams and Dalzell attended a meeting of the Association over which Mr. Dacre now presides, in order to urge it to support the application for a charter for Scotland, and thus effect disunion. But the Association was more loyal than the two Edinburgh professors, who had to return to the Scottish capital to continue their canvassing there. Mr. Dacre's account of the "consummation" which has now been effected must be pronounced as mythical and untrustworthy as the foregoing statements; at least, it is as different to the truth as the latter is to romance. I have a great respect for the President of the Lancashire Veterinary Medical Association, but in this instance I do not hold his powers in narrating history or fact in very high esteem. I beg he will accept the corrections I offer with the same good feeling with which they are tendered, and that you will permit me to designate myself by an old motto, as

Yours obediently,

May 3, 1879. "FIAT JUSTITIA, RUAT CŒLUM."

WORK AND PAY IN INDIA.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—"Under instructions by telegram from Army Head-Quarters, Simla, first-class Veterinary Surgeon R. Poyser, 'The Carabineers,' is directed to proceed at once to Peshawur, and inspect all Dâk horses on the Grand Trunk Road between that place and Rawal Pindee, for Glanders." Now the above officer will, in all probability, have to continue his inspections into Afghanistan, and will eventually find himself pretty near the front line of warlike operations. He has been selected for this special kind of service in connection with various epizootic affections three times since October last, and whilst he fully appreciates the favour of the selection, he deplores the pecuniary loss he has so often suffered. After his second tour he applied for expenses, and his Excellency the Commander-in-Chief in India actually and flatly refused them, though they were forcibly represented and recommended by the Principal Veterinary Surgeon. To say the least of it, it is bad treatment, and not conducive to keeping up the standard of the Veterinary profession in the service. As you said in an editoral, "there is a premium on laziness and incompetency," and those who will or can work may do so, and live at hotels and pay for the means of locomotion, suffer wear and tear of body and mind, and clothes also, and receive no more than the miserable pittance that will only just stave off hunger and thirst, and hide the nakedness of the body, in a quiet home.

All moves entail expenses; and Mr. Poyser naturally and justly objects to bear them *pro bono publico*. The Home Government is liberal enough to give 7s. 6d. per day on the march, and police officers of one month's service in India can travel about their districts every day of the month and receive 8s. extra pay per day; and yet veterinary surgeons are forced hundreds of miles from their homes to slave for the State and bear the extra expenses themselves, to say nothing of the excessive heat. Its all "rot," sir. Warn the profession.

Yours truly,

"A PERIODICAL MARTYR."

THE "FELLOWSHIP DEGREE."

To the Editor of the VETERINARY JOURNAL.

SIR,—I am sure you know the object I have in view too well to permit the remarks of your correspondent, Richard S. Reynolds, in your last month's issue to pass unchallenged, for another reason also, your correspondent being a member of Council. Now it has always been my custom to avoid personality or individuality in my writing, and strictly to observe silence; for no good has or ever will emanate from splenetic or vindictive writing. Therefore silence is advisable, for we are told that "*Le silence du peuple est la leçon des rois.*"

In vol. iv., pp. 465, 6 of your Journal, will be found the views I held on the educational test for the degree prior to my examination, and these views I still hold and maintain; but I do object to a continual diminution of the educational test, and rather than witness the continual hacking at the bye-law No. 50, I would prefer the "obnoxious" bye-law expunged, and a test for "sound common sense" substituted in lieu thereof. For if the candidate possesses a fair amount of this rather un-common sense, combined with integrity, he, I opine, will prove a better Fellow than the pedantic man.

The expletives intended, no doubt, by Mr. Reynolds to cast clouds over those who have obtained the degree, fail; but they hang over those gentlemen who constituted the Board of Examiners; and I am grieved to know from one of the Council that those who have passed are so deficient in their educational attainments. Our Council should avoid this.

In No. 32, vol. iv., p. 111 of the Journal, the candidates are complimented. Surely there is something beyond professional *esprit* and *morale* at work in the mind of Mr. Reynolds, which is to be deeply lamented; for although he is to me a perfect stranger, I am assured he is an earnest and good member of our craft. It is, however, to be hoped that with time's soothing influence he will be brought round to professional emulation, and taste the examination himself by going in for the degree.

During the long period of twenty-four years passed by me in the profession, I have watched with feelings of delight its gradual rise in public estimation—the labour of the few, not the *many*, tending to develop all this; and those who have done so well desire to mark *those* who assist to maintain the integrity of the profession, by raising the higher standard,—to mark those labourers: thus we have the *Fellowship Degree.* Surely no member, good and true, will now raise a barrier to its immediate success.

My estimate of the title of Member or Fellow is little indeed in a pecuniary point of view, and my love for the "profession" can alone appraise its value to me, while my desire is to help to the utmost to raise it. Hoping now that remarks anent the degree will be confined to their proper quarter—the Council Chamber of the R.C.V.S.—and to see Mr. Reynolds a Fellow,

I am, yours truly,

ROBERT WARD, F.R.C.V.S.

London, W.

PARTURIENT APOPLEXY IN COWS.

To the Editor of the VETERINARY JOURNAL.

SIR,—I wish, with your kind permission, to ask some of those gentlemen who are dissatisfied with their present treatment of this perplexing disease,

to try the hypodermic use of Ergotin; and, further, to ask them to report the results through your excellent Journal.

Having, like most practitioners, experienced frequent disappointment at the adverse issue of the disease, under the many known methods of treatment, I was, about a year ago, led to adopt the exhibition of ergot, by a consideration of the records of its physiological and therapeutical actions. For some time I administered *pulvis ergotæ* or *liquor ergotæ*, "*per vias naturales*," but in the established disease the results were not encouraging. Where, however, the *pulvis ergotæ* had been added to the ordinary "drink" given immediately after calving, no case of Parturient Apoplexy has come under my notice; but whether this can be ascribed to mere coincidence or to ergot as a prophylactic, I do not pretend to say. The failures, although discouraging, I suspected might be due either to the uncertainty of the action of these preparations of ergot—as they are often found bad and inert, or to a retarded digestive and absorptive activity, consequent on the disease. I then resorted to the hypodermic injections of the active principle of the drug, giving from 25 to 30 grains of Ergotin—taking care to inject deeply into the muscular structure to prevent after mischief—and repeating the dose, if necessary, in ten or twelve hours. The other treatment consisted of counter irritants, catheterism, enemeta, etc., etc., with, where deglutition was not much impaired, the exhibition of a saline purgative. This treatment has, so far, in the limited number of cases in which it has been tried, been attended with almost universal success, whether in the early or later stages of the disease.

Although one may have some idea of the *rationale* of the treatment by ergot, it would, I think, be premature at present to attempt any definite conclusions.

I am, sir, yours respectfully,

T. BRIGGS, F.R.C.V.S.

Bury, Lancashire, *May 12th*, 1879.

POISONING BY EATING PUTRID FISH.

To the Editor of the VETERINARY JOURNAL.

ALPHAMSTONE.

CAUTION TO FARMERS.—Mr. Chas. Tokely, of this parish, writes to us. I recently carted a waggon-load of sprats into the farm-yard to let them stand on the waggon that the droppings might go into the litter beneath. This was done at midday on Monday, 30th Dec., 1878. At the time there was two capital cart colts in the yard, valued at about £40 each. On the following (Tuesday) night the man whose duty it was to see after them did not notice anything was the matter with them at ten o'clock, but at half-past four in the morning he found one of the colts dead in the yard and the other one very ill. The latter, under Mr. Godbold's (veterinary surgeon, Sudbury) treatment, is in a fair way of recovery. Mr. Godbold is of opinion that the colts ate some of the putrid fish, which poisoned them. If this is made known to the public, it may act as a caution, and prevent other mishaps.

DEAR SIR,—The above was published in the *Suffolk and Essex Free Press*. Do you think the colts would eat the fish?—Yours faithfully,

Topplesfield, Essex. CHARLES MARKING, V.S.

[We have had no experience of horses eating fish in this country, but it is a fact that in Iceland horses, cattle and dogs live to a certain extent on this food, which they greedily devour.]

OFFICIAL PARTIALITY.

To the Editor of the VETERINARY JOURNAL.

SIR,—I approach the subject which I have headed as above with the greatest reluctance, and nothing but a sense of the duty I owe to the profession, and my anxiety for its welfare, impels me to allude to it. As I understand it, the position of the President and Members of Council of the Royal College of Veterinary Surgeons should be one of absolute impartiality towards all the teaching schools affiliated to it, and their neutrality in all inter-scholastic rivalries and contentions should be rigidly observed.

With the schools they should not interfere in such a way as to countenance or support one more than another, remembering always—as you have yourself well expressed it—that the schools exist for the profession, not the profession for the schools; and also that undue partiality to any one school is certain to cause ill-feeling and generate a sense of injustice not only in the others, but in the profession. It is well known that in Scotland there are three competing schools, and two of these are in one city—Edinburgh, one founded and endowed by the late Professor Dick, the other recently established in opposition to it by an *alumnus* of the Dick School, who at one time professed great veneration for the memory of the distinguished and worthy Professor.

Whether by accident or otherwise, the new opposition establishment in the Scottish capital has received most marked favour and distinction by the much-respected gentleman who has held the office of President of the Royal College for the past three years, and who has lent all the weight and influence of his official position to aggrandize the said establishment and its Principal, at the expense of the old school and its professors, if not also at the expense of the Glasgow school, which has, I believe, been only favoured once with his presence, the Dick School not at all. I yield to no one in the profession in my respect for the President of the Royal College, nor in my gratitude to him for what he has done in the way of promoting the interests of Veterinary Medicine in this country; but I, nevertheless, do think that his intense admiration and demonstrative partiality for a particular school, which certainly has not yet deserved anything like the praise he so abundantly lavishes upon it and its Principal, might have been restrained somewhat, or kept in abeyance while he held the Presidential chair, from which all schools expect equal justice and favour.

If the school in question is all that is said of by its partisans, it surely does not require the energetic bolstering it has received during the last three years from this quarter. In any case, I and very many others do not think it adds to the dignity or reputation of the office of President to make such invidious and unfair distinctions, and it is earnestly to be hoped that future Presidents will not make such a mistake, but maintain the office as pure and unsullied in its character for impartiality and fairness as such an office should bear. The other schools in Scotland have done nothing to deserve disfavour that I am aware of, and their Principals have undoubtedly at least as much claim to *blue ribbons* for the scientific and moral reputation they have earned as those of any other school. The Principals of the Glasgow and Dick schools have done as much as any others in their educational and scientific duties, and the *moral* reputation of the profession has been also carefully guarded by them as its representatives in Scotland. It sounds like mockery, or something worse, to profess veneration for the memory of Professor Dick, and at the same time to start an opposition school (which was not needed) to undermine and destroy that which he earnestly laboured all his life to

establish and endow. He was an honest man ; would that others were like him.

The Members of Council who come to Scotland as Examiners have the good taste, I am happy to observe, to maintain their position of neutrality and impartiality when in Edinburgh, and appear ready to sacrifice whatever private partiality they may have, in the interests of their profession and their duty. Let us hope that future Presidents may imitate them so long as there are rival schools, and "a fair field and no favour" exists as a British maxim. Apologising for the length of this letter, which I earnestly beg of you, in the interests of justice to publish,

I remain, yours truly,

"CLYDE STREET."

CORRECTIONS AND COMMENTS.

THE following correction in Mr. Almond's paper on "Visceral Inflammation," which appeared in our last issue, is requested. At page 319, five lines from bottom, instead of "and to this extra pressure is due," etc., insert "which extra pressure is due," etc.

THE name of the gentleman first in the list of graduates from the Edinburgh New College is not Semple, as on p. 369, but Temple.

A PLACARD has been forwarded to us for comments. It is issued by a member of the profession in one of the Midland Counties, who appends to his name M.R.C.V.S., and contains a list of the horse and cattle medicine he vends—such as "Gripe Mixtures," "Tonic Drenches for Cattle," "Cleansing Drenches," "Foot Rot Mixtures," "Thriving Powders for Sheep—a Preventative (!) of Rot." We are informed that this placard is generally circulated, and is posted in Inn Yards throughout the district. As the issuer of these placards only graduated (from a Scotch school) in 1877, he may not know that he is injuring the reputation of his profession by having recourse to such a method of conducting business. A hint of this may be sufficient.

THE appointment of a Veterinary Inspector for the county of Merionethshire, under the "Contagious Diseases Animals Act, 1878," was considered on April 8th, and the Clerk of the Peace stated that he had only received two applications to the advertisement which he had inserted in the papers by order of the Court at the last Quarter Sessions—one being from Mr. Richard Wynne Williams, chemist, Dolgelley, and the other from Mr. R. Roberts, veterinary surgeon, M.R.C.V.S., Wrexham. Mr. Roberts had also written a letter, which he said might be read by any member of the Court, but was not to be published.

Mr. POPE asked whether it was imperative under the Act that the inspector should be an M.R.C.V.S.

The CLERK stated that it so stated in the Act, but that an order in Council was afterwards issued by which a person otherwise then a member of the Veterinary College might be engaged, when there was a difficulty in finding one.

Mr. VAUGHAN, Mr. REVELEY, and others mentioned that Mr. R. W. Williams had acted as inspector in the Dolgelley district before to the satisfaction of the Local Authority.

Mr. POPE said that the terms quoted by Mr. Roberts were exceedingly vague, and contained so many exceptions that it would be difficult to know what his charges would be, while those of Mr. Williams were very plain, and he would propose that Mr. R. W. Williams be appointed for at least six months—his further appointment to be subject to the approval of the Court.

Mr. HOLLAND seconded, and it was carried unanimously.

[We commend this notice to the Veterinary Department of the Privy Council, which is responsible for the sad state of affairs exemplified in the above report, and which shelters itself under the flimsy plea that there are not veterinary surgeons in some localities to appoint as inspectors. Of course this plea is unfounded, and the so-called Veterinary Department gives its hearty support to imposture and empiricism in its most barefaced and dangerous form—the substitution of chemists, druggists, and in fact anyone who has the audacity to pretend to a knowledge of contagious diseases in animals, for qualified members of the veterinary profession. This is not only an injustice to the latter and an encouragement to imposture, but it is an abuse and a source of danger and loss to the public.]

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from R. Roberts, Wrexham; R. J. Rutherford, Edinburgh; Captain M. H. Hayes, Meerut; J. Mills, Royal Horse Artillery, Edinburgh; Professor A. Smith, Toronto; C. Marking, Essex; R. Ward, London; Professor McCall, Glasgow; "Artemus Secundus;" T. H. Merrick, Kettering; A. E. Macgillivray, Banff; T. Moore, London; T. Greaves, Manchester; T. Briggs, Bury; "Fiat justitia, ruat cœlum;" R. Poyser, Carabineers, India; "Clyde Street;" "A Periodical Martyr;" R. W. Matthews, Belfast; E. S. Bates, New York; N. Almond, London, W. Broughton, Leeds.

BOOKS AND PAMPHLETS: *C. H. Hertwig*, Taschenbuch der Gesammten Pferdekunde; *G. Pini e Prof. N. Lanzillotti*, Dizionario dei Termini Antichi e Moderni delle Scienze Mediche e Veterinarie; *E. Dele*, Importation des Salaison a Anvers; *P. Gunther*, Beiträge zum Situs des Rindes; *L. V. Tellor*, The Diseases of Live Stock; *T. Walley*, The Four Bovine Scourges; *W. Fearnley*, Lessons in Horse Judging.

JOURNALS, ETC.: *Wochenschrift für Thierheilkunde und Viehzucht; North British Agriculturist; Index Medicus; Beilage zu den Veröffentlichungen des Kaiserlich Deutschen Gesundheitsamtes* (2 Copies); *Archives Vétérinaire; Recueil de Méd. Vétérinaire; American Veterinary Review; Archiv für Wissenschaftliche und Praetische Thierheilkunde; Annales de Méd. Vétérinaire de Bruxelles; Der Thierarzt; Athenæum; Melbourne Chemist and Druggist* (2 Copies); *Journal of the National Agricultural Society of Victoria; Repertorium der Thierheilkunde.*

NEWSPAPERS: *Toronto Globe; Edinburgh Courant; Glasgow Herald; Cambrian News; Philadelphia Public Ledger; Scotsman; Daily Chronicle; Melbourne Argus; Hereford Journal; Yarmouth Independent; Turf, Field and Farm.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded, addressed to the Editor, VETERINARY JOURNAL, Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

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